The

CHEMISTAND DRUGGIST

SEPTEMBER 8 1956

BRITISH PHARMACEUTICAL CONFERENCE NUMBER



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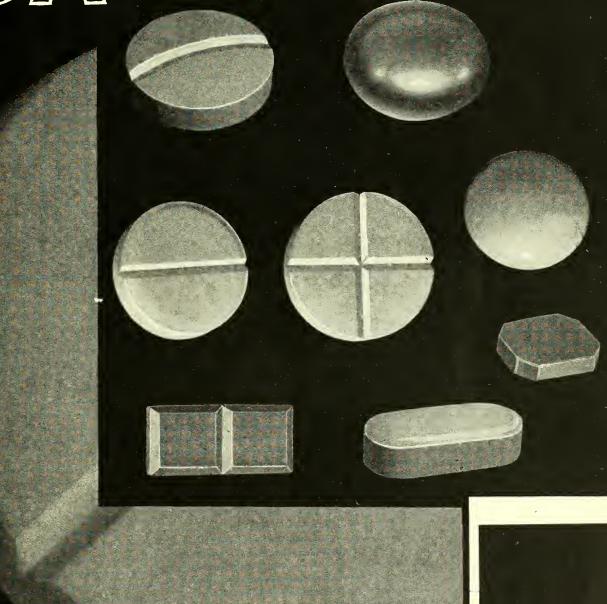
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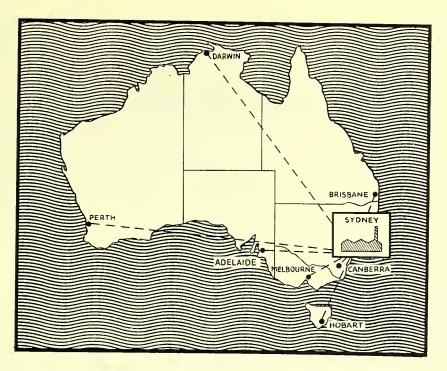
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GREEN



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Preludin is a powerful appetite controlling agent. It acts quickly and effectively-without risk-by restraining the patient's appetite. It strengthens adherence to a prescribed diet. It breaks the psychogenic overeating habit. And it enables the patient to lose weight safely and without mental strain. Preludin in recommended dosage does not raise the blood pressure, and does not create excessive mental stimulation. It is the prescription of choice in all cases of obcsity-especially those with cardiovascular disorders—because it reduces the risk of reducing.

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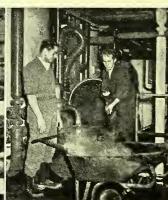
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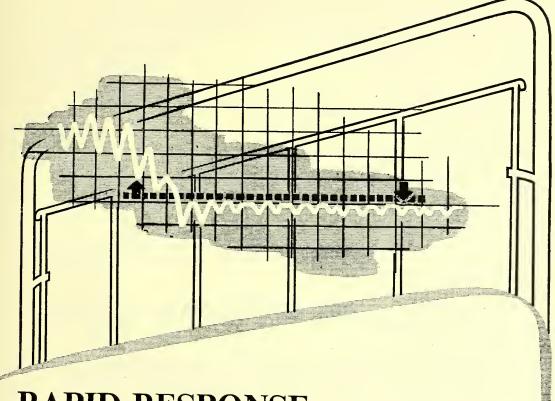
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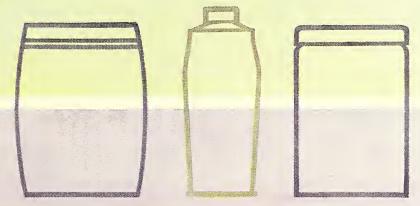
still counts!

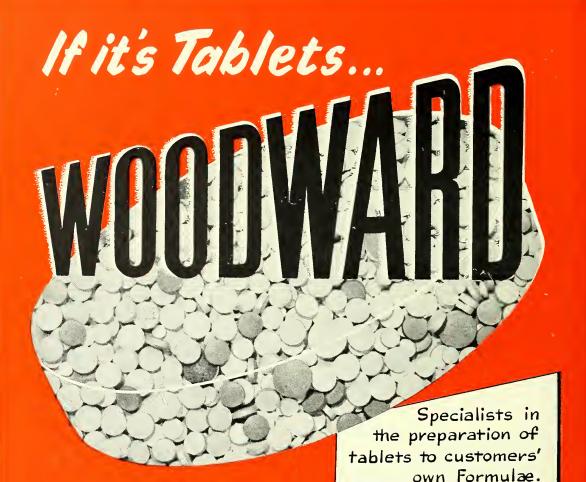
These unusually shaped containers are made from extruded aluminium. A special process will give a wide range of contours, some of which are illustrated here. The powder containers are sealed with a powdertight seam after filling from the bottom. Standard sprinklers of the 'Kliktite' or 'push-on' type can be fitted. Water-based emulsion cosmetic creams can be filled hot into the larger bulged containers. The seamless construction allows solidification to take place without loss of liquid through leakage. Closures of decorative metal or plastic add to the display value of the finished container. Bulged containers may be decorated in up to 4 colours on a satinized aluminium base, which lends itself to brilliant results in half-tone reproduction, or they may be coated and printed in up to 5 colours. For unusual sales appeal perhaps an unusual shape would suit the packaging of your product. Metal Box will be glad to help you find the answer.

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G. O. WOODWARD & CO., LTD.

MANUFACTURING CHEMISTS

LARKHALL WORKS, MORRISH ROAD, BRIXTON HILL, LONDON, S.W.2

Telephone: TULSE HILL 9481-2-3

BONUS OFFER

Until Further Notice



ON MINIMUM ORDERS OF £3

2 FREE BOTTLES IN EVERY DOZEN

ON ORDERS OF £5 AND OVER



QUANTITY DISCOUNTS

apply to all orders for Smith & Nephew products totalling £7.10.0. and over. Other lines such as Nivea and Elastoplast products may be included with Blue Velvet bonus orders to qualify. Order value £7.10.0. and over—3¾% discount.

Order value £15.0.0. and over— $7\frac{1}{2}\%$ discount.

Blue Velvet sales up. About 30% more Blue Velvet has been bought from chemists since January, 1956 than during the same period last year.

What's more, this Blue Velvet bonus offer coincides with a new phase in our advertising campaign starting now!



Blue Velvet sales are bound to boom this autumn and winter. Place your orders while the *bonus offer* stands!

Full details have already been mailed to all chemists. If you have not received your copy, please write to:

SMITH & NEPHEW LTD. · WELWYN GARDEN CITY · HERTS

SPECIAL WRAPPING PAPER OFFER



On quantity orders for Counter Rolls, Sheet Wrapping Paper, and Dispensing Parchment, you can obtain the following discounts under our special offer:



5% on FIVE COUNTER ROLLS

Swedish pure kraft or sulphite: any size or sizes.

5 on FIVE REAMS of WRAPPING PAPER

(sheets, $20'' \times 30''$), or ten reams ($15'' \times 20''$); kraft or coloured sulphite.

5% on DISPENSING_£6 PARCHMENT order

These are papers of the best quality, and representative of our extensive selection for the pharmacy:

GREEN STRIPES ARE POPULAR!

To our wide range of printed counter satchels has been added a new green-striped series in four sizes—a very popular line, competitive in price. Your own name can be printed at small extra cost on three of the sizes. Samples and details on request.

FOR THE HOLIDAY SEASON

—the attractive No. 3 Certor Counter Satchel in photogravure $(5'' \times 7'' \times 9\frac{1}{2}'')$.

• If it's paper or

made with paper you can get it from

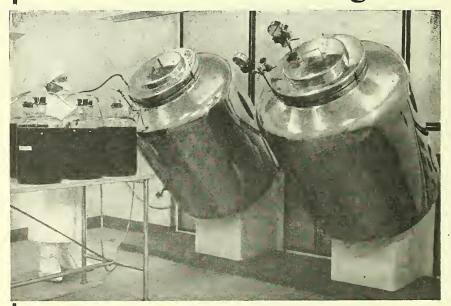
MACDONALD'S of MANCHESTER

NOTE NEW ADDRESS

MACDONALD & SON LTD · PORTLAND MILL · ASHTON-UNDER-LYNE · LANCS.

Telephone: Ashton-under-Lyne 4422 (10 lines)

Stainless Steel against Polio



THE TAYLOR RUSTLESS FITTINGS CO. LTD.

Head Office: RING ROAD, LOWER WORTLEY, LEEDS, 12 Telephone: Leeds 63-8711/2 London Office:
14 GREAT PETER STREET,
LONDON, S.W.I
Telephone: Abbey 1575

 $\begin{pmatrix} T \\ R F \end{pmatrix}$

We are very proud to be able to associate ourselves with this British achievement in the production of a Polio vaccine.

The stainless steel blenders illustrated here were produced by us for Messrs. Glaxo Laboratories Ltd., and are used to mix the various strains of killed vaccine.

The entire vessels revolve, internal baffles causing the mixing, the whole of the internal surfaces being mirror polished, which required that all fillet welds where the baffles and other internal fittings were attached had to be ground and polished to smooth crevice free fillets to enable sterile conditions to be maintained.



JOHN MORRELL & COMPANY LTD., 57 VICTORIA STREET, LIVERPOOL 1



Bislumina is a Registered Trade Mark

can be obtained from the Sole Distributors in the U.K.

C. J. HEWLETT & SON LTD

King George's Avenue, Watford, Herts.

or through your usual wholesaler

Bismuth Aluminate Bi₂ (Al₂O₄)₃, 10H₂O, a patented compound, is manufactured under licence in the United Kingdom by

MINING & CHEMICAL PRODUCTS LIMITED, LONDON

This year-

Rheumatic sufferers will be going in for

DOLS'

Flannel & Rub

A National Advertising campaign embracing Press, Television and Radio Luxembourg will this year put **DOLS'** Flannel and **DOLS'** Rub into thousands of homes all over the country. The demand will be raised in the peak months of winter ailments and we will have extra supplies of both the Rub and Flannel available for you. Stock up to take command of your area sales.

DOLS' VOLATALISE FLANNEL LTD., HUDDERSFIELD, YORKSHIRE





Examples of advertisements that will appear in a nation wide campaign from October to March.

We're telling your customers about

"Snap! it's easy with flash"



This is a handy, 16-page booklet covering many aspects of flash photography for advanced amateurs as well as for beginners.

They'll find it attractively designed and full of useful information. Order now, they are free!

Give them a good display in your window and on the counter.

PHILIPS PROPRO **FLASHBULBS** for Perfection in a Flash!

(MADE IN HOLLAND)

PHILIPS ELECTRICAL LIMITED . S.L.D. Lighting Division

"PHOTOLITA" PHOTOFLOOD LAMPS . DARKROOM SAFELIGHT LAMPS



Century House . Shaftesbury Ave . London W.C.2

"PHOTOCRESCENTA" ENLARGER LAMPS - PROJECTOR LAMPS

(PP1068)

Heinz Strained Foods business has multiplied 5 times in 8 years

Only the finest ingredients are used in Heinz Strained Foods. They are recommended by the medical profession and backed by national advertising. No wonder demand is growing so quickly. Check your stocks and re-order now. You can increase your business by selling the full range of 19 varieties.



H. J. Heinz Company Ltd., Harlesden, London N.W.10

YESTAMIN keeps moving!

Moderate prices and widespread advertising keep Yestamin on the move across the counter. There's big profit for you in this popular and ethical product. Display YESTAMIN now for regular repeat sales.



50 TABLETS Retail 1/3 Trade 10/6 per dozen 100 TABLETS Retail $1/10\frac{1}{2}$ Trade 15/9 per dozen 300 TABLETS Retail 4 9 Trade 40/- per dozen

ESTAR

THE ENGLISH GRAINS CO., LTD., SHOBNALL ROAD, BURTON-ON-TRENT

DE-NOL

For the treatment of stomach ulcers

This unique product is now available on the British market, and can be obtained from the Distributors for the United Kingdom at the addresses given below. In view of the remarkable success in many parts of the world of the DE-NOL method in the treatment of ulcerative conditions of the stomach, it is anticipated that the product will enjoy an extensive sale in the United Kingdom.

The Retail Price of the DE-NOL treatment is £14 · $\mathring{2}$ · 3 (incl. tax).

> YOU CAN SELL DE-NOL WITH CONFIDENCE

Terms and literature on request

PEPTINOL (G.B.) LTD.

80 Elswick Road, Newcastle upon Tyne 4

Tel: Newcastle 34350 Tel. Add: "DE-NOL, NEWCASTLE UPON TYNE"

UNITED KINGDOM AGENTS

London and Home Counties:
Peptinol (G.B.) Limited,
Christopher Street, Finsbury
Square, LONDON, E.C.2.

NEW CASTLE UPON TYNE, 4. Square, LONDON, E.C.2.

N.W. England and N. Wales:
D. Machell (Wholesale) Ltd.,
276 Claremont Road, Moss Side,
MANCHESTER, 14.

S.W. England and S. Wales I
S. J. Carter (Import, Export) Ltd.,
2 Vicarage Road, Torquay,
DEVON.

Scotland:
H. G. Barrowman,
4 Guildhall Street,
DUNFERMLINE. Northern Ireland i Wm. C. Knox, 3S May Street, BELFAST.

Spontex

ANNOUNCE TWO BONUS OFFERS

TO THE RETAIL TRADE ONLY! AVAILABLE UNTIL OCTOBER 31st

'SPONTEX' CELLULOSE SPONGES
ONE DOZEN 9d SAMPLE SIZE

FREE AND TAX PAID

This offer enables you to give FREE to your best twelve customers, a Sample size 'Spontex' at no cost to yourself. Twelve Sample size 'Spontex', Tax paid, will be sent to you *free* against a qualifying order for 3 Dozen* Household 'Spontex'.

There is no top limit, twelve free Sample 'Spontex' will be sent for every qualifying order. To obtain this special offer, orders must be sent on the SPECIAL REPLY-PAID CARD obtainable either from Sponcel Limited, or from your Wholesaler. Full details of scheme, upon request, or ask your Wholesaler.

* The three dozen qualifying order must not be less than a total trade price value of 68/7d. including Purchase Tax.

YOU ARE SURE TO BENEFIT IF YOU ACCEPT ONE OR BOTH OF THESE SPECIAL OFFERS

'SPONTEX' CLOTH

13 TO A DOZEN

To every Retailer who orders a minimum of 3 Dozen 'Spontex' Cloths, we make this special 13 to a dozen offer. Orders qualifying for this offer *must* be sent on the SPECIAL REPLY-PAID CARD obtainable either direct from Sponcel Limited, or your Wholesaler.

There is no top limit. Until October 31st you can order any quantity you like greater than the qualifying order and receive an additional Cloth for every dozen ordered.

BIG NEW ADVERTISING CAMPAIGN FOR 'SPONTEX' CLOTHS AND SPONGES

* NATIONAL PRESS * WOMENS MAGAZINES

* COLOUR FILM



MEANS BUSINESS — MORE BUSINESS FOR YOU!

40, CHANCERY LANE, LONDON, W.C.2.

FOR THE PATIENT WHO NEEDS A GOOD NIGHT'S SLEEP

Doriden

(a-phenyl-a-ethyl glutarimide)

SAFE NON-BARBITURATE HYPNOTIC FREE FROM "HANGOVER"

Available in tablets of 0.25 g. Bottles of 25 (3/9d.), 100 (12/6d.) and 500 (59s.).

Subject to the usual discounts. Exempt Purchase Tax.

CIBA

'Doridm' is a registered trade mark. Reg. user CIBA LABORATORIES LTD, HORSHAM, SUSSEX Tel: Horsham 4321 Grams: Cibalabs, Horsham

2/3

Please send us your enquiries

for

BISMUTH GLYCOLYLARSANILATE NNR 52
DEHYDROCHOLIC ACID
ESTERS of PARA-HYDROXY-BENZOIC ACID
NOVAMINOSULFONUM

QUABAIN (Quabainum G-Strophanthin)

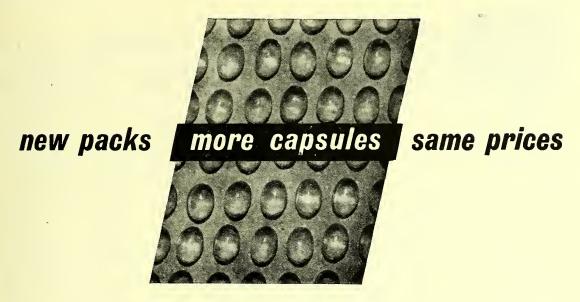
PHENESIN (Citrate of Phenylethylacetic acid- β -diethylaminoethylester)

TETRACAINE HYDROCHLORIDE

HOMMEL PHARMACEUTICALS

121 Norwood Road, Herne Hill, LONDON, S.E.24

Tel: TULse Hill 3276/7



better value for money with

CROOKES halibut oil capsules

Now 30 for 2/6 - 60 for 4/6 · 120 for 8/6

The new economical packs are featuring prominently in Crookes biggest-ever publicity campaign on television and in the national dailies, popular weeklies and leading women's magazines. Attractive show material and window displays are available. You are bound to profit from such tremendous support for your across-the-counter sales. So check your stocks now. We will replace old packs of 25 and 100 with the new 30 and 120 packs on a pack for pack basis, in good time for you to meet the extra demand.

N.B. Bonus on vials of Oil and Infants Emulsion is now discontinued.

Bonus Terms have already been mailed to you

CROOKES HALIBUT OIL CAPSULES



THE CROOKES LABORATORIES LIMITED . PARK ROYAL . LONDON . N.W.10



VITA-E Alpha tocopherol (Vitamin E) for CARDIOVASCULAR-RENAL DISEASES

The natural vitamin E available only since 1948 must not be confused with the wheat germ oil in use before that date with its limitations

as to potency and stability.

The natural vitamin E of today comprises a concentrate distilled from the oils of cottonseed, palm, soya bean, etc.

The standard laid down by the League of Nations is that 1 international unit = 1 mgm. of d.l. alpha tocopheryl acetate.

The VITA-E Gelucap (75 i.u.) heads the list of brands approved by the Vitamin E Society and is that recommended by the Shute Foundation for Medical Research and used with such conspicuous success at the Shute Institute.

Natural Alpha Tocopherol Succinate in Tablets containing 50 i.u. and 200 i.u. of Vitamin E is now available. This is of particular value in veterinary practice.

Literature on request

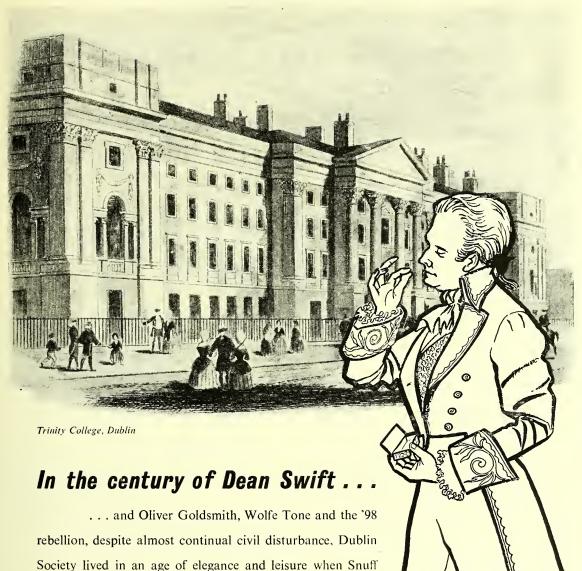
Sole Manufacturers:

THE BIOGLAN LABORATORIES LTD., HERTFORD, HERTS, ENGLAND.

-Specialists in Hormones and Vitamins-



'Phone: BROadwell 1355



Society lived in an age of elegance and leisure when Snuff taking was a social accomplishment. Today PABYRN Snuffs provide valuable and effective forms of medication.

Pabyrn

Insufflations include:-

DI-SIPIDIN PABRACORT COBALIN

for Enuresis for Hay Fever for B_{12} Therapy

PAINES & BYRNE LTD., PABYRN LABORATORIES, GREENFORD

Telephone: Perivale 1143 (5 lines) Telegrams: Glands Greenford

Revenue introduce new medicated Silicare

AMERICA'S
BIGGEST SELLING
PROTECTIVE LOTION

Now in
Britain

Revlon's Medicated 'SILICARE'—the first silicone-based lotion for hands and body will be on sale soon in Britain.

Tested and recommended by leading skin specialists. Revlon's Medicated 'SILICARE' outsells all other protective lotions in the United States.

Silicare

Protective lotion for hands and body

OTECTS... Against skin mage from harsh soaps d detergents.

OMOTES HEALING . . . tually helps heal red, re hands.

FTENS...Rough, hard, acked or chapped skin.

ICALLY TESTED AND PROVEN

Revlon

REVLON'S MEDICATED SILICARE WILL SEND SALES SOARING
IN THE HIGH PROFIT HAND CARE FIELD

Protective lotion for hands and body

MEDICALLY TESTED AND PROVEN

PRODUCT OF REVLON PHARMACAL DIVISION

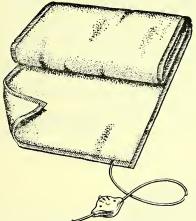
2 New Best Sellers

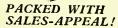
They've got what it takes to sell—and sell! The new Best Electric Blanket and Mattress Overlay look and are the luxury comforts of everyone's dreams—but their prices are strictly in the moderate class! Both are fitted with one-piece continuous self - compensating element. No thermostats, no arcing, no radio or TV interference.

BOTH CARRY A WHOLE TWO YEARS GUARANTEE

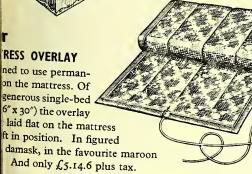
CTRIC BLANKET

gle size (60" x 30").
gle heat. Covered in
n-soft Duplex-Rayon,
last word in comfort.
rich attractive apricot
le. This product makes
verwhelming appeal at
£6.11.0 plus tax.





The Blanket and the Overlay are each packed in their own colourful display boxes, incorporating an attractive cut-out figure to compel attention and ensure quick sales.





BEST PRODUCTS LTD.
FELIX WORKS
FELIXSTOWE
SUFFOLK

ONE OF THE COSSOR GROUP OF COMPANIES

Introducing a real



The very popular Ladye Jayne cushion tipped hair grips are smooth inside to prevent 'drag'. They are now available in this new attractive handbag wallet which contains 24 grips.

STRONG ADVERTISING BEGINS OCTOBER

WOMAN'S OWN · VANITY FAIR · WOMAN
MODERN WOMAN · SHE WOMAN & BEAUTY
WOMAN'S ILLUSTRATED · EVERYWOMAN



Ladye Jayne HAIR GRIPS AND CLIPS

FROM YOUR USUAL WHOLESALER. If in any difficulty write to the manufacturers: JARRETT, RAINSFORD & LAUGHTON LTD., Birmingham 14

Delegates to the British Pharmaceutical Conference in Dublin are assured of a warm welcome

from a hospitable

and spend a holiday in IRELAND?

Here are all the ingredients for the

perfect vacation. Magnificent scenery,

first-class hotels and a wide variety of sporting facilities, including some of the best fishing

and golf in the world

Advice, information and free literature from:

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71 Regent Street, London W.1. Tel. REGent 6801-2-3.





THOS. GUEST & CO. LTD., CARRUTHERS ST., MANCHESTER 4

FASSETT & JOHNSON Ltd.

take this opportunity to wish all their friends in the Pharmaceutical world a happy and successful Conference

May we also remind you that we provide a

SPECIALIST SERVICE

for

SURGICAL DRESSINGS & PLASTERS

and

SURGICAL HOSIERY

(Burson - Olympic - Surgylon)

and in the DISTRIBUTION of some of the best-known names in

PROPRIETARY PHARMACEUTICALS &

----TOILET PREPARATIONS-----

QUICKIES • COLORTINT • ARGYROL
DABITOFF • ANZORA • SPRAYTAN

5-DAY DEODORANTS

HOUSE OF WESTBROOK
LUXURY LANOLIN COSMETICS

Orders and enquiries for these and others well-known to you are welcome and will have our prompt attention.

FASSETT & JOHNSON LTD.

86 Clerkenwell Road, London, E.C.1

Telephone: CLErkenwell 2336

& 139 Bath Street, Glasgow, C.2.
Telephone: Glasgow Douglas 7757



Meggeson Gee's Linctus Pastilles are not the cheapest you can buy...

But they are the best that chemists — and chemists only — can sell. Possessing the true linctus flavour, they are consistent in colour and shape and are packed in attractive, handy tins; above all, they carry the name and the reputation of the House of Meggeson. And you know what that means.

TRADE TERMS: 11|- PER DOZEN. QUANTITY TERMS ON REQUEST



Your "SILENT" SALESMAN in NORTHERN IRELAND

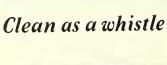
An integral part of the United Kingdom

Read in the homes of every hamlet, village, town and city throughout the whole of this important industrial and commercial territory

Belfast Celegraph

Head Office · ROYAL AVENUE, BELFAST
London Office · 112 FLEET STREET, E.C.4

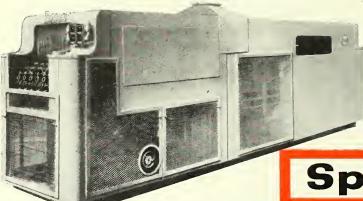
THE NEWSPAPER WITH THE LARGEST CIRCULATION IN NORTHERN IRELAND





Dry as a bone ...





That is how the Spartan Hydro bottle washing and drying machine turns them out. It minimises absolutely the risk of the odd unsterile package—delivering bottles—bright and bone dry—at an hourly rate of between 1200 and 3600. It is totally enclosed, easily accessible, fitted for variable speeds, and delivered as a complete unit. Built by specialist engineers, it is simple to instal, and particularly suitable for the Pharmaceutical industry

Spartan

HYDRO BOTTLE WASHING AND DRYING MACHINE

For all conditions at home and abroad, for all sizes and type of bottle,
and for care and economy of operation SPARTAN is the answer

R. POWLEY & SONS LTD. Dept. 6/C, St. Mark's Rd. Sunderland, England

Tel. 4846-7

Grams & Cables: "Powley" Sunderland

Reflect your professional pride

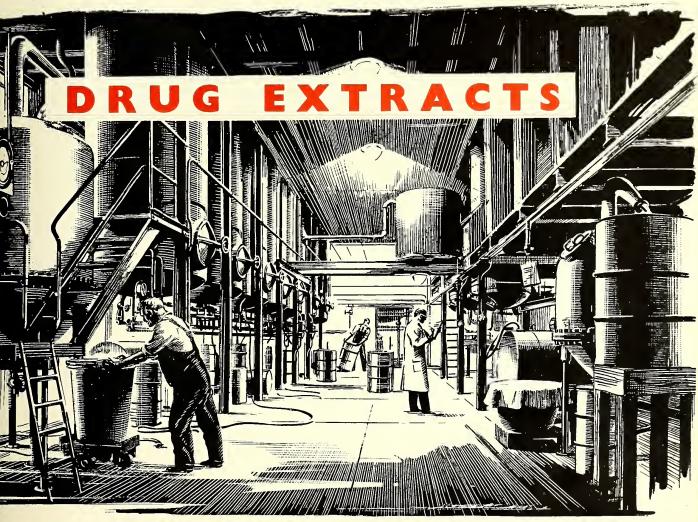
"STANDARD" OWN NAME COUNTER PACKS

A complete ethically presented range of tablets, pills and packed pharmaceuticals with your exclusive label at competitive prices



FULL INFORMATION FROM :-

THE STANDARD TABLET CO. LTD., GOLDSTONE LABORATORIES, HOVE 4, SUSSEX



as manufacturers of drug extracts (concentrated, liquid, granular and owdered) for over a century, our experience in producing the highest uality products retaining the full therapeutic properties is unique.

Our extracts are used by pharmaceutical companies the world over. Let us show you samples from our wide range including:—

SELLADONNA • GLYCYRRH. • GENTIAN • SENNA
SENEGA • ERGOT • IPECAC. • NUX VOMICA



FORD ALLEN & SONS LTD., Wharf Road, London, N.I Telephone: CLErkenwell 1000 (7 lines)





MOULDED & METAL CLOSURES

WITH UGB GLASS CONTAINERS

The Closure Division of The United Glass Bottle Manufacturers Ltd

HEAD OFFICE: 8 LEICESTER STREET, LONDON, W.C.2 Tel: GERRARD 8611 (18 lines) Grams: KORKANSEAL, LESQUARE, LONDON



She may only be wanting a mixing bowl . . .

BUT LOOK WHAT YOU CAN SELL HER!



There's a big market for houseware

made from

Y ou can sell any amount of goods made from 'Alkathene'-THE original polythene discovered by I.C.I.

'Alkathene' houseware is receiving a lot of publicity in the national women's magazines. All these advert-isements feature the 'Alkathene' label and this will ensure that the housewife will ask for 'Alkathene'. The full weight of all this advertising is behind your sales drive. In addition, striking and attractive display material may be

obtained on request from your normal suppliers. Why not organise your own 'Alkathene' Week with special window and interior displays? That is the way to gain customers and profit from the 'Alkathene' National Campaign!

I.C.I. do not themselves manufacture houseware from 'Alkathene'. All en-quiries for individual articles should be addressed to the manufacturers through the usual trade channels.

* 'Alkathene' is the registered trade mark for the polythene made by I.C.I.

MADE FROM POLYTHENE POLYTHENE

LOOK FOR THIS LABEL

Articles bearing this label are made from 'Alkathene', the made from 'Alkathene', the sign of the highest quality.

IMPERIAL CHEMICAL INDUSTRIES LIMITED . LONDON . S.W.



These famous products are being advertised in the DAILY MIRROR week beginning Sept. 10th

* 12,789,000 readers of the Daily Mirror will see these advertisements. That's one in three of all shoppers in your area.

* I.I.P.A. Readership Survey.

Tell your other suppliers, the support you want is brand advertising in the Daily Mirror.



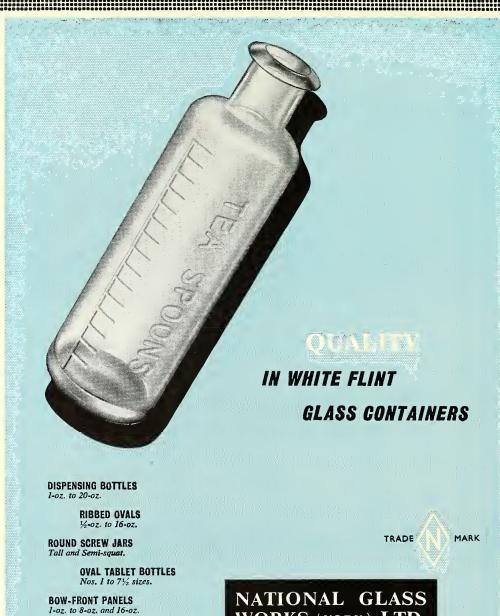
biggest daily sale on earth DAILY MIRR



... display these brands on your counters, in your windows.

Be sure customers see that you are their nearest stockist.

ves goods nationally, regionally, LOCALLY



WORKS (YORK) LTD.

FISHERGATE, YORK. Tel. YORK 23021 ALSO AT: 105 HATTON GARDEN, LONDON, E.C.1. Tel. HOLBORN 2146

PANELLED FLATS

OLIVE OIL BOTTLES

21/2-oz., 5-oz. and 10-oz.

1/2-0z. to 3-oz.

• Prompt delivery from stock

• Packed in easily handled cartons

WHOLESALE ONLY

M. W. HARDY & CO. (OVERSEAS) LTD

Pinners Hall · Great Winchester St. · London ·

WORLD EXPORT AGENTS

for

PENICILLIN PREPARATIONS

MANUFACTURED BY



THE RANGE INCLUDES

LOZENGES · TABLETS · OINTMENTS · Etc. Aids to Dispensing Outfits of Cream and Drops

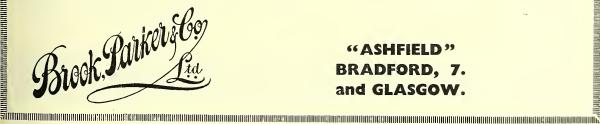






Whether it be . . .

GALENICALS, PACKED SPECIALITIES, TABLETS, PILLS, SUNDRIES or PHOTOGRAPHIC CHEMICALS and APPARATUS or CAMERAS.



BRADFORD, 7. and GLASGOW.



at £14. 13. 8 Retail. Lovely woollen blankets in pastel colours, waterproof elements, safe when wet and washable home, with illuminated two-pole cord switch. Awarded the Seal of the Good Housekeeping Institute.

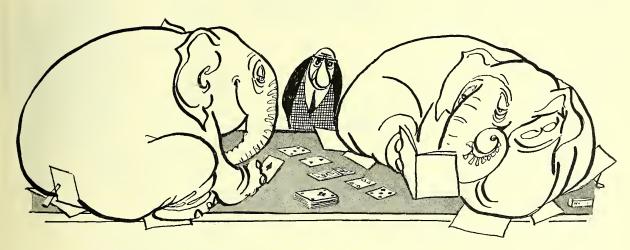
tail. Awarded the Seal of the Good Housekeeping Institute. The finest Electric Blanket money can buy.

warm-glow' are backing your sales

by extensive advertisements in the National Press and High Class Home Magazines. Your Wholesaler can give you further details—or write to us at Dept. C.3.

WARM-GLOW Co L^{TD} · LEIGH-ON-SEA · ESSEX · ENGLAND Telegrams · WARMGLOW · LEIGH-ON-SEA Telephone · EASTWOOD · 54272

Is this your counter Mr Dealer?



Don't waste good counter space on white elephants—slow moving lines. Right there in front of the customer is the place to display Movie-Paks. They'll be in constant demand, attract new customers and bring you big profits. There's a vast and evergrowing market for 8mm. and 16mm, films for hire or purchase and with the Movie-Pak scheme you can offer the finest selection of titles. Remember too, customers for Movie-Paks are regular customers and all potential purchasers of cine equipment.

How's this for Service? This season we at the G.B. Film Library

have planned to help you to even bigger profits—here's how:—

- 1 WE WILL FORWARD TO YOU all direct enquiries for hire or purchase from users in your locality.
- 2 WE WILL SUPPLY FREE

NEW 8mm, and 16mm, fully illustrated Movie-Pak catalogues. NEW 8mm. Movie-Pak handy Pocketbooks.



4 WE WILL SUPPLY FREE

Attractive counter dispenser for "Movie-Pak News".



3 WE WILL SUPPLY FREE

Regular issues of "Movie-Pak News" listing new titles (1st issue of new series now



Don't delay-there's Big Profit in Movie-paks



G.B. FILM LIBRARY

RANK PRECISION INDUSTRIES (BAF) LTD. AINTREE ROAD · PERIVALE · GREENFORD · MIDDX.

Post this coupon NOW to

G. B. FILM LIBRARY Aintree Road, Perivale, Greenford, Middx.

Please send me full details of Movie-Paks. I would like

- copi:s of NEW 8mm, and 16mm. Catalogue. copies of NEW 8mm. Pocketbook.
- copies of "Movie-Pak News No. 5"
- Counter Dispenser for "Movie-Pak News". Supply of Movie-Pak Dummy Boxes.

(Please indicate your requirements in square provided).

NAME

ADDRESS

CD/9/56.



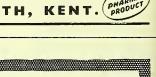
'Touch & Go'-still the theme of our Nation-Wide advertising campaign, featuring: Self Application—Solid Embrocation in Handy Stick Form—Cleanliness and Convenience.

Ralgex is selling faster than ever for the Relief of Pain due to:

BACKACHE - NEURALGIA - STIFF NECK - LUMBAGO - RHEUMATISM - STRAINED MUSCLES DISPLAY RALGEX

and prove in your own shop that if seen—easy to examine—easy to touch—sales go up and up. Ralgex is a first-class pick-up repeater line. Very attractive show material gladly sent on request.

PHARMAX LIMITED, GRAVEL HILL, BEXLEYHEATH, KENT.





BAILLY





AQUEOUS ISOTONIC SOLUTION INDICATED IN RHINO - PHARYNGEAL AFFECTIONS



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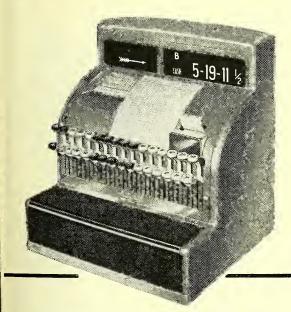
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ESTABLISHED 1859

The weekly newspaper for pharmacy and all sections of the drug, pharmaceutical and fine chemical, cosmetic, and allied industries

Official organ of the Pharmaceutical Society of Ireland and the Pharmaceutical Society of Northern Ireland

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September 8, 1956

No. 3994

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Volume 166

SEPTEMBER 8, 1956

No. 3994

Drug Pricing in Ulster

A "VERY SATISFACTORY" REPORT

THE Drug Pricing Committee of the Northern Ireland Health Services Board considers the report of the Ministry of Finance's Organisation and Methods Branch on the Drug Pricing Bureau to be "very satisfactory."

The report was tabled at a meeting of the Board in Belfast on August 28. It was stated that the Drug Pricing Committee considered the report to be very satisfactory in that the present position of arrears was attributed almost entirely to the increased number of prescriptions received, Lack of accommodation made it impracticable for all the necessary staff to be recruited at once and there was a delay in the delivery of machines.

THE PHARMACEUTICAL OFFICER stated that he had already recruited extra punch operators and had placed a provisional order for the supply of additional machines.

The Board—on the recommendation of the Committee—decided that the eleven available pricers should be concentrated on pricing work (The pharmaceutical officer reported that that recommendation had already been put into operation) and it was agreed that the Board should recruit additional pricers immediately accommodation became available and that the establishments officer should consider the possibility of training other members of the staff as punch operators and pricers who could assist in the Bureau as required.

Additional Punch Operators

The Branch also recommended that four additional punch operators should be recruited (that recommendation has already been put into operation) and that two additional punching machines and one verifier should be acquired mmediately. The Board adopted the ecommendation.

The Branch recommended that a number of the code-checking, hand-pricing and punching staff should be rained in each other's work and made nterchangeable. The Board agreed that bat recommendation should be given trial.

The Board—"while recognising the ifficulty of setting fixed standards for ricers"—adopted the Branch recomendations that: (1) The work load sould be assessed early each month and schedule prepared showing the volume f work on each section and the numers of staff required in each; (2) the rogress of the work should be checked ally against the work schedule; and that minimum work standards should eset up for hand-pricers and for punch to verifier operators.

Following a report that prescriptions were being dispensed by a chemist not on the Board's List, the pharmaceutical officer said it appeared that prescriptions were being handed in at one shop, not on the List, and were being dispensed at another shop on the Board's List and then returned to the first shop to be given to the patient.

The pharmaceutical officer submitted a prescription for an asthma inhaler and mouthpiece and explained that the chemist had dispensed a Deedon inhaler, the only type he had had in stock. In future he would supply the prescribed type. Payment was approved.

The pharmaceutical officer submitted ten prescriptions each for three 40-cu. ft. oxygen cylinders and stated that, although there were three cylinders prescribed on each prescription, the patient had apparently taken delivery of the cylinders individually at different times. The equipment had been hired from April 1-30 and May 1-19. He stated that chemists had been notified by the Board of the basis on which payment would be made for the supply of oxygen and hire of equipment. MR, H, W. GAMBLE said he understood that the Ministry had accepted the profession's view that a separate dispensing fee should be allowed for each cylinder dispensed. The Board—on the recommendation of the Drug Pricing Committee—agreed that one dispensing fee should be paid for each prescription dispensed in addition to the hire charge.

THE SECRETARY (Mr. Gordon R. Stewart) tabled a Press cutting from a local newspaper in which a correspondent had pointed out that more care should be exercised by those responsible for displaying the rota cards for chemists' shops on public holidays. The correspondent's difficulty had arisen on a public holiday on a Monday when two chemists' shops had the ordinary rota cards displayed showing the shops open on rota from 8 to 9 p.m., whereas, a special card should have been displayed showing that on public holidays the opening hour was the same as on Sundays: 6 to 7 p.m. THE PHARMACEUTICAL OFFICER suggested that the Local Pharmaceutical Committee should be invited to submit their observations and suggestions regarding the reprinting of the rota cards, That was agreed.

NEWS DAILY OF THE CONFERENCE

For members of the British Pharmaceutical Conference meeting in Dublin this week, THE CHEMIST AND DRUGGIST has been providing a special daily news bulletin. The first of the bulletins is reproduced on pp. 243-50 from matrices (from the type used in Dublin) flown to London.

Health Service in Russia

BRITISH DOCTOR'S IMPRESSIONS

DR. James G. M. Hamilton, Edinburgh, leader of the British Medical Association delegation who returned from Russia on August 26, said at London Airport that he did not think that general health in Russia was any higher than in Britain, and that he would not like to practise there. He said that the delegation were very impressed by the colossal amount of Government money devoted to medical care, chiefly the increase in hospital research institutions and convalescent establishments over the whole country. The delegation were strongly impressed



POLIOMYELITIS VACCINE FOR SOUTHERN RHODESIA: The first consignment of Polivirin poliomyelitis vaccine being dispatched by Glaxo Laboratories, Ltd., by air to Salisbury, Southern Rhodesia. The British Overseas Aircraft Corporation hostess is seen checking the manifest with Messrs. Glaxo's transport manager (Mr. C. E. Dixon). Small quantities of British poliomyelitis vaccine are now being released to several Commonwealth countries and Colonial territories.

that there was a great deal of emphasis on medical research and what was seen was of high quality. Medical treatment was not free to the Russians. Patients paid for their own drugs and there was a private service.

Refresher Course

CROYDON PHARMACISTS' VENTURE

CROYDON Pharmacists' Association, in conjunction with Croydon technical college, are organising a refresher course for pharmacists. The course consists of ten lectures on pharmacology and chemotherapy by Dr. G. F. Somers, B.Sc., F.P.S. (lecturer in pharmacology, School of Pharmacy, London University). The lectures are being held at the college (new building), Fairfield Park Lane, Croydon, on the following Thursday evenings at 8 p.m.: October 11, elementary principles of drug action, relationship between chemical constitution and pharmacological activity; October 25, anæsthetics, hypnotics, analgesics; *November* 8, chemical transmission of nervous impulses, properties of acetylcholine and parasympathomimetic drugs; November 29, anticholinesterases, parasympathetic nerve antagonists and the ganglia; *January* 17, 1957, adreline, sympathomimetics and adrenergic blocking drugs; January 31, neuromuscular transmission, neuromuscular block curare, decamethonium and suc-cinylcholine; February 14, histamine and antihistamines; February 28, hormones (including A.C.T.H., cortisone, estrogens, antithyroids); March 21, chemotherapy, sulphonamides, anti-biotics; April 4, chemotherapy of tropical diseases. Fee for the course is 25s. Applications should be sent to: Mr. G. F. Clark, 9 Palace View, Shirley, Croydon.

Damascus Fair

BRITISH EXHIBITORS

AT the third Damascus International Fair, which opened on September 1, British participation is on a larger scale than that of any other country. The United Kingdom section, making its appearance for the first time, comprises a pavilion with a total area of 20,000 sq. ft, and a further 20,000 sq. ft, of outdoor space. The products or services of more than one hundred British firms are being displayed on thirty stands inside the pavilion (occupying 14,000 sq. ft. of net stand space) and nine stands outside (occupying 16,000 sq. ft. of net stand space). The section was organised by the Federation of British Industries through its subsidiary company, British Overseas Fairs, Ltd. Among exhibitors are Bovril, Ltd., J. Grossmith & Son, Ltd., Imperial Chemical Industries, Ltd., and Mono Pumps, Ltd.,

Petroleum Chemicals

IMPORTANT BRITISH DEVELOPMENTS

IMPORTANT developments in the manufacture in Great Britain of new industrial chemicals from petroleum were announced by Monsanto Chemicals, Ltd., on August 30. The company plans to spend some £8½ millions on the first stage of a long-term expansion programme. A new factory will be

constructed on a 100-acre site alongside the Fawley, Hants, refinery of the Esso Petroleum Co., Ltd., from which Monsanto will draw feedstock for conversion into a wide variety of raw materials for use in the plastics, textile, rubber, paint, paper and other manufacturing industries. The first plant to be erected will be for the manufacture of 10,000 tons of polyethylene a year. Survey work is being carried out on the site, construction is beginning shortly and production is scheduled to start in 1958. The next products in the company's programme will be copolymers of acrylonitrile, butadiene and other monomers. Following that, a other monomers. Following that, a major plant is to be constructed for the manufacture of acrylonitrile, an essential raw material for synthetic polymers and synthetic fibres used in the production of high quality clothing materials and other textile fabrics.

Company Conference

REPRESENTATIVES FROM MANY PARTS

MEMBERS of the staff from Singapore, Scotland and Northern Ireland were among the seventy guests present at the annual dinner and dance of the Crookes Laboratories, Ltd., held in London on August 23. Mr. I. B. Thomas (president, Crookes Laboratories' outside representatives for 1956) proposed the loyal toast. Captain R. C. Kelly (chairman of the company) proposed the toast of "The Ladies" and Mrs. I. B. Thomas replied. "The President" was proposed by Mr. E. Walls and Mr. Thomas responded. The master of ceremonies was Mr. A. H. Claisse. Other guests included Mrs. R. C. Kelly, Mr. and Mrs. G. E. Watson, Mr. and Mrs. J. R. Bowden, Mr. W. J. Wilson, Mr. and Mrs. C. J. Clarke, Mr. F. C. Bowring, Mr. J. Ward, and Mr. and Mrs. C. H. Argent, Singapore. The dinner was preceded by a two-day representatives' conference over which Mr. J. R. Bowden presided. During the conference, addresses were given by Dr. A. R. H. Hicks on "Oxycodone Pectinate" and "Antibiotics," by Mr. R. Scott Miller on "Product Development," and Mr. N. Taylor led a discussion on veterinary matters.

Less Consumer Goods

TREASURY'S PROGRESS REPORT

THE Treasury in its Bulletin for Industry for August states that measures taken to restrain home demand, particularly for consumer goods and so encourage an expansion of exports, are beginning to have effect. Consumer expenditure in real terms has risen very little; defence output is running below last year's level and both investment and exports have risen. Production of most consumer goods is lower than a year earlier; output of capital goods is higher, and there have been some changes in the pattern of employment. There seems now to be a better prospect for price stability, the Bulletin an excessive rise in home adds, but costs would prevent that achievement. The overseas trade figures combined with the expected improvement in invisibles have produced a surplus on current account of at least £100 millions in the first half of 1956 against a surplus of only £15 millions in the first half of 1955, but the surplus is "a good deal too low to meet our needs."

Truss Fitting

COURSES OF LECTURES

THE Institute of British Surgical Technicians has made arrangements for courses of lectures on the anatomy, pathology and treatment of hernia to be given in the following towns, at weekly intervals, commencing on the dates stated at 7 p.m.:—

MANCHESTER: University of Man-

Manchester: University of Manchester, September 5.

LIVERPOOL: University of Liverpool, September 17.

September 17.

LEEDS: General Infirmary, September 18.

London: Chelsea Polytechnic, October 8.

The examination at the conclusion of the course will qualify successful students for admission to the Abdominal Hernia Appliance Fitters Register of the Institute of British Surgical Technicians, Inquiries should be addressed to the Registrar, Institute of British Surgical Technicians, 6 Holborn Viaduct, London, E.C.1.

Cholesterol Production

SCIENCE APPLIED IN WOOL INDUSTRY

ADDRESSING apprentices and junior operatives attending a one-day conference arranged by the Wool (and Allied) Textile Employers' Council in Bradford on August 22, Professor J. B. Speakman, Leeds University, speaking about the application of science to the wool textile industry, cited as an example the discovery of a method of extracting cholesterol from wool wax alcohols. For years, said Professor Speakman, Britain had had to pay dollars to the United States for supplies, which were previously obtained from the spinal fluid of cattle. Now a Bradford firm was the world's largest producer.

Monopolies Commission

WORK ON FERTILISERS TO CONTINUE

IN accordance with the provisions of the Restrictive Trade Practices Act, 1956, the Board of Trade have given directions to the Monopolies and Restrictive Practices Commission about which of the existing references are to be continued. The references to be continued include one on chemical fertilisers. That reference is being adapted to the Commission's new terms of reference under the Act and work on it will not be completed for some considerable time.

New Employment Terms

EDINBURGH COMPANY'S SCHEME

NEW and improved terms of employment for established employees with two years' minimum continuous service are announced by Ethicon, Ltd. Edinburgh, Such established employee will be entitled in the event of termination of employment to four weeks notice by the company, but will retain his or her right to give the company

me week's notice. Mr. L. A, Bailey (managing director) described the new scheme as a unique departure in labour relations in the pharmaceutical industry. Salaried members of the company's staff have always been employed on the basis that has now been introduced for all employees of the company.

IRISH NEWS

Ulster Chemists

ELECTIONS TO COMMITTEE

THE following eight members of the Executive Committee of the Ulster Chemists' Association are due to retire this year by rotation:—Messrs. N. A. J. Anderson, J. A. Brown, H. G. Campbell, R. Gibson, O.B.E., T. A. Gibson, C. L. Gordon-Rattie, P. R. W. Shinner, A. Steede. Those members are eligible for re-election and do not require to be nominated. Nominations for other candidates, which should be signed by the proposer and seconder, should reach the secretary of the Association, 4 Waring Street, Belfast, by noon on September 20.

NEWS IN BRIEF

EMPLOYEES of hospital authorities who are called up as Army reservists are to be allowed to receive the balance of their civil pay.

A COMPETITION to find the "Loveliest Working Girls in Britain" has been won by six girls employed by D. & W. Gibbs, Ltd., Hesketh House, Portman Square, London, W.1.

A RAIDER, early on August 28, flung a brick through a window of the pharmacy of Mr. Frank Ellams, M.P.S., Wilmslow Road, Rusholme, Manchester, and stole a camera worth more than 68.

THE public were the judges of a window dressing competition held in connection with the Wallingford, Berks, festival week. They awarded the second prize to Reynolds & Johnstone, Ltd., chemists, 17 St. Mary Street, Wallingford.

RESULTS of the 1956 examinations of the Institute of Export show that ninety-six students passed the first, ifty-eight the intermediate, and sixty-hree the final examination.

A BOOKLET recently published by the Yorkshire Council for Further Education gives information on courses in hemistry and allied subjects, including pharmacy, and the facilities available for their study in technical coleges in the Council's area; entitled to Guide to Courses in Chemistry and allied Subjects, it is available from the ecretary, Y.C.F.E., Basinghall Buildings, Upper Basinghall Street, Leeds, 1.

SPORT

Golf.—London Chemists' Golfing Society, at udbury golf club on August 30, competitions for ulter & Crispe prize, Leichner cup and Asprose bowl, Results: Medal competition for Budler Crispe prize, 1, E. S. Hole (12), 68 net; 2, H. Maile (10), 74 net; 3, B. F. Tisdall (10), 78 et. Aspro rose bowl won by H. A. Coward (14), 5 net, Stableford competition for Leichner cup, C. H. Maile (10), 32 points; 2, E. S. Hole (12), 7 points.

TOPICAL REFLECTIONS

By Xrayser

Medicine Chests

The photograph on p. 218 illustrating a typical medicine chest recalls the famous eighteenth-century travelling chest in the possession of the Royal College of Physicians at Edinburgh which I was privileged to inspect on a visit there. It is known as Prince Charlie's medicine chest, and though it appears to be French, there is considerable doubt if the Young Pretender actually brought it to this country. It is known positively, however, that it belonged to Sir Stuart Thriepland, an ardent Jacobite, who was present at the battle of Culloden as principal medical officer to the Prince and his forces. The chest is rather less than a foot in each direction, is hinged, and contains trays of bottles with upwards of 150 drugs and preparations. The range of drugs is wide, as a random selection will indicate: Rhubarb, squill, Peruvian bark, jalap, tincture of aloes, hiera picra, asafoetida and cream of tartar. The chest also contains opium pills and diuretic pills, a balance, a spatula, and a mortar and pestle. Despite the passage of time, the drugs are still in good condition. Military medicine advanced tremendously under the influence of Thriepland and the surgeon-general of the opposing forces, Sir John Pringle. The latter presented to the library of the Edinburgh college ten manuscript volumes of his treatment and observations in the military sphere.

Seven Long Years

The excellent series of articles on Bristol Infirmary by Mr. Laurence Dopson, an instalment of which appears on pp. 222-3, throws a fascinating light on the conditions of life of the apothecary and the apprentice in the eighteenth century. The life of servitude and limited leisure was not unlike that of the anonymous swain of the same period who paid court to that Sally who is remembered for having lived in an alley. He, it will be recalled, dearly loved but one day, and that's the day that comes betwixt a Saturday and Monday." (A prose account would have informed the reader that Sunday was his day off duty, but Carey found, as others before and since, that verses impose certain restrictions.) The apothecary's apprentice at Bristol not only had to spend seven years in the learning of his trade, but had to pay a stiff premium for his board and lodging, in addition to a gratuity for instruction. It would seem from Rule II that being an apprentice apothecary was not without its hazards, since the sum of twenty guineas per annum towards his instruction was payable for the first five years or for "as many of those five years as the apprentice shall live." Whether the apprentice frequently succumbed is not known but it says a good deal for the dauntless courage of the youth of Bristol that any were forthcoming despite the saving clause.

Poisonous Seeds

The report from Manchester of the treatment in hospital of seven children who had eaten the seeds of laburnum (p. 209) is a reminder that there are potential sources of danger to children other than the tablet or capsule in the home. Yet poisoning from plant sources is sufficiently rare to occasion remark, despite the attractive appearance of certain fruits and seeds. One of the herbals says that the seeds of laburnum are purgative and emetic, but "are not noted for any medical properties." There seems to be something attractive about a pod, for I recall, many years ago, a child being found in the garden eating lupin seed with every appearance of relish. None of the usual text-books was equal to the occasion, and it must be confessed that the only sufferer appeared to be the mother of the child. But the herbal, when consulted, said that a decoction of lupin seeds was excellent in the beginning of consumption and in jaundice, and should be drunk in the manner of barley water. The decoction also "opened all obstructions." At all events, the child was none the worse, and is now a very competent botanist professionally. Whether the ingestion of an unknown quantity of lupin seed at an early age had a determining effect on her future career I am unable to say.

BRITISH ASSOCIATION IN SHEFFIELD

Proposal for closer relations with industry

THE pharmacist who attended the 118th annual meeting of the British Association for the Advancement of Science in Sheffield, August 29-September 5, if he still retained his interest in science generally, might have found several of the papers of interest. He would, however, have found few contributions with a direct bearing on pharmacy and might well have hastened, if he had the time and the means, to another place across the Irish Sea, where he would no doubt have found that all the deliberations had a very obvious connection with the practice of his profession. Nevertheless the Sheffield meeting was stimulating. Well over 3,000 scientists and interested lay men and women registered and the attendance surpassed that of Bristol in 1955. The local committee arranged accommodation in hotels, University halls of residence, hostels and private homes for over 1,800 members.

Earlier in the year the Association's council appointed a committee with Sir Ben Lockspeiser as chairman to Association and a report was made available in time for the Sheffield meeting. Briefly, the committee thinks that the Association should establish closer relations with industry and is considering how best that can be done. It is proposed to set up a programme committee to supplement the work of sectional committees. The programme committee would endeavour "to ensure a balanced programme for the meeting as a whole." The Association thinks that there is a need for the publication of a suitably planned and presented non-specialist scientific journal. In addition, it thinks that there should be special one-day meetings on scientific subjects, which would offer industrialists and others "an opportunity to discuss their problems on a platform common to themselves and to the country's leading scientists and administrators." The annual meeting would become an annual stocktaking to review the progress of science.

Chemistry Section

The presidential address to the chemical section on August 30 was devoted to "Steelmaking since Bessemer." Sir Charles Goodeve, O.B.E., F.R.S. (director, British Iron and Steel Research Association) delivered the address. His paper described the "cyclosteel" process employing powdered iron ore and coal and "tonnage" oxygen developed by PA PA PA PA gen, developed by B.I.S.R.A. The process, which has been described as "turning Bessemer inside out," is said to avoid the use of sinter plant and coke ovens.

Later papers described the manufacture of titanium (Dr. James Taylor, director, Imperial Chemical Industries, Ltd.) and chemical reactions at very high temperatures (Professor George Porter (professor of physical chemistry, Sheffield University)).

The following day, under the chair-

manship of Professor R. D. Haworth, F.R.S. (Firth professor of chemistry, Sheffield University), the chemical section heard a series of papers on antioxidants. Professor C. E. Bawn, F.R.S. (professor of inorganic and physical chemistry, Liverpool University), who introduced the series, said that much was known about the subject for it had been one of the most profitable fields of organic chemistry. The three papers that followed were on antioxidants in the food industry (Dr. C. H. Lea, Low Temperature Research Station (director, Scientific Industrial Beneral Control of the Control dustrial Research), Cambridge); in the oil industry (Mr. C. N. Thompson, Shell Research, Ltd.); and in the rubber industry (Dr. J. T. Watts, Rubber Service Department, I.C.I., Ltd.).

Antioxidants in Food

DR. LEA said that the addition of chemical antioxidants to food, in the way that they were added to rubber and petroleum products, was not permitted at present in Britain. A limited use of antioxidants was, however, already permissible in a number of other countries—in the United States, for example, it was estimated that some 1,000 tons per year were used for that purpose, a large quantity when it was remembered that most antioxidants were employed in food at the rate of one part in 10,000.

In 1954, the preservatives sub-committee of the Food Standards Committee of the Ministry of Agriculture, Fisheries and Food, had made a number of recommendations that indicated that a similar use of antioxidants would be permitted in Britain in the not too

distant future.

Quite apart from any considerations of the desirability or otherwise of adding antioxidants to food for consump-tion by humans or animals, the action of those substances was a cause for concern because storage behaviour was often influenced in marked degree by the pro- and anti-oxidants which food already contained naturally, or which it acquired fortuitously during handling and processing.

The defects arising from the action of atmospheric oxygen, and which sometimes could be combated by the use of antioxidants included loss of natural "fresh" aroma and flavour natural "fresh" aroma and flavour and the development of "rancid" or other "off" odours and flavours, discolorations and loss of nutritive value due to the destruction of vitamins A, E and C.

Dr. Lea outlined the factors influencing oxidation. In a fat, for example, its degree of unsaturation was of great importance. Oxidation could be influenced by high temperatures, light (ultra-violet and blue), ionising radiations (β , γ and x-rays), peroxides, presence of metal ions, etc.

Antioxidants which had been found useful in fats and other foods were usually ortho- or para-substituted phenolic compounds. There were the hydroquinone derivatives, for example,

∝-tocopherol (vitamin E) and ∝-tocopheryl quinone; there were the pyrogallol derivatives, such as gallic acid (used as esters) and L-epigallocatechin gallate (which occurred in tea). Of the catechol derivatives, chlorogenic acid and caffeic acid esters were employed as antioxidants. Naturally occurring flavonols such as quercetin and rhamnetin as well as synthetic flavonols were used as antioxidants. Other synthetic compounds that had been "taken over" from the petroleum industry included BHA ("butylated hydroxy anisole") and BHT ("butylated hydroxy toluene" or Ionol). Certain aromatic amino compounds (ag aromatic amino compounds DPPD and santoquin) had found a limited use, for example, in the preservation of carotene in dried lucerne and for the stabilisation of vitamin A. A second large class of substances included synergists and metal deactiva-tors, which reinforced the antioxidant activity of the primary inhibitors often by complexing traces of pro-oxidant metals. Substances of that type, such as citric acid and its oil-soluble mono esters (e.g., ascorbyl palmitate) could esters (e.g., ascorbyl palmitate) could help to protect edible fats and oils against traces of copper and iron picked up from the plant during pro-cessing. Ascorbic acid was also a use-ful inhibitor of enzyme browning in fruits and vegetables, a form of de-terioration due to the oxidation of polyphenolic constituents under the inpolyphenolic constituents under the influence of a copper-containing enzyme.

Two points which Dr. Lea mentioned were that metal containers (such as tin-plate) might greatly increase oxidation and that it was probable that vitamin E acted as a biological antioxidant in the living animal.

Addressing a joint session of the economics and engineering sections of the Association on September 3, Mr. J. F. Coales of the Engineering Laboratory, Cambridge University, said automation should enable the productivity of the country as a whole to go on increasing for many years without increase in the labour force and that must result in some improvement of the standard of living. He mentioned that the Du Pont Company in the United States had used a computer to control the production programme of its dyestuffs plant by making a statistical evaluation of the orders over a period of seven years calculating the trends and so estimating future requirements. Output had been increased by 14 per cent, and work in progress cut by 42 per cent.

A display and demonstration of scientific glassware, organised by the Glass Manufacturers' Federation, was held at the Sheffield University during the period of the annual meeting. Among period of the annual meeting. Among those exhibiting were Quickfit & Quartz, Ltd., Heart of Stone, Staffs; G. H. Zeal, Ltd., London, S.W.19; James A. Jobling & Co., Ltd., Sunderland, co. Durham; Beatson, Clark & Co., Ltd., Rotherham, Yorks; A. Gallenkamp & Co., Ltd., London, E.C.2

COMPANY NEWS

Previous year's figures in parentheses

G. B. KENT & SONS, LTD.—Group trading profit, etc., for 1955 is £36,025 (£39,133), and net profit, £3,398 (£6,892).

BOOTS PURE DRUG CO., LTD.—An interim dividend of 3 per cent., less tax, is to be paid to Ordinary shareholders on September 30.

A. C. NIELSEN CO., LTD. — Dr. Edward L. Lloyd (vice-chairman and managing director) announced recently the creation of a new executive status to be known as associate director, and the appointment of Mr. Ian Macdonald, M.P.S., as one of the first executives to bear that title.

BEECHAM GROUP, LTD. — Income from sale of products during year ended March 31 was £27,193,697 (£22,783,947). Sales of proprietary products in the United Kingdom increased by £3,162,490 to £17,791,443. Trading profits declined by £195,019 to £3,665,808, which reduction was more than accounted for by a substantial reduction in profits of the proprietary food businesses.

PFIZER, LTD. — Mr. Richard C. Fenton (vice-president, Pfizer International, New York) has been elected the first chairman and managing director of the firm's British subsidiary, Pfizer, Ltd. Simultaneously, Mr. Fenton has been appointed area manager for all Pfizer undertakings in Northern Europe and Africa, Mr. John Rodgers, a fellow director of Pfizer, Ltd., remains the company's general manager, Mr. Philip V. Colebrook (works and production manager) has been elected a new member of the board. The fourth director of Pfizer, Ltd., is Mr. John M. Wallace (formerly vice-president of the Chase Manhattan Bank). All four directors are British.

MONSANTO CHEMICALS, LTD.

—Unaudited results for the first six months of 1956 (compared with those for the first six months of 1955) are announced as follows:—Net sales, £6,934,343 (£6,517,242); net income, before taxes, £787,722 (£917,415); net income after estimated taxes, £383,522 (£470,379). The figures shown above relate to the company and its United Kingdom subsidiaries only and do not include earnings of its Australian subsidiary. Turnover for the first six months of 1956 is stated to be the highest recorded for any first six months of a year and is equal to an increase of 6.4 per cent. over the corresponding period of 1955. Export business is up by 5½ per cent. on the same basis. Increased costs and stabilised prices have resulted in reduced profit margins. A first interim dividend of 6½ per cent. on the Ordinary stock is declared.

VITAMINS, LTD. — Group profit for the year ended March 31, after depreciation of £69,957 (£54,258), etc., was £188,828 (£174,797), and group profit, after tax, £106,169 (£92,928). During the year under review the increase in pharmaceutical turnover was the greatest recorded by the company, states the chairman (Mr. H. C. H. Graves). Sales of fine chemicals, the newest branch of the company, were

also a record but on the agricultural side sales did not go ahead so fast. The company's increase in exports over the previous year alone exceeded the whole volume of exports of two years ago. On the National Health Service the chairman says that almost all the electorate of the United Kingdom has been led to believe that if the Service foundered on financial rocks it would be due to the "high cost of drugs." But the drugs cost only 5 per cent. of the total, other costs, including administration, accounted for 95 per cent. "The concentration of public attention on the 5 per cent, undoubtedly served as a most effective diversionary effort or smoke screen to obscure criticism of the other costs "which according to the 1955/6 estimates are to cost £41 millions more than in the previous year—a sum greater than the whole of the drug bill for the year.

New Companies

P.C. = Private Company; R.O. = Registered Office

LALON, LTD. (P.C.). — Capital £5,000 To carry on the business of chemists, druggists, etc. The first directors are not named. Solicitors: Langlois Harding & Co., 7 Union Street, London, E.C.2.

E. B. HAWORTH, LTD. (P.C.).—Capital £2,000. To carry on the business of chemists, druggists and librarians, etc. Directors: Nora Haworth and Albert Smith, M.P.S. R.O.: 50 Queen Street, Great Harwood, Lancs.

BIOREX (MARKETING), LTD. (P.C.).—Capital £20,000. To carry on the business of manufacturers, exporters, importers of and dealers in chemicals, medicines, etc. Directors: S. Gottfried, L. Baxendale, B.Sc., B. Stross, M.Sc., M.B., M.P., and H. Davies, M.P. R.O.: 47 Exmouth Market, London, E.C.1.

WINTHROP LABORATORIES, LTD. (P.C.). — Capital £10,000. To carry on business as manufacturers of and dealers in substances used in medicine, pharmacy, perfumery and toilet articles of all kinds, etc. Subscribers: James A. Mallows and Patrick J. Gaynor. The first directors are to be appointed by the subscribers. R.O.: Edgefield Avenue, Newcastle-on-Tyne, 3.

FORECASTING (STATISTICS), LTD. (P.C.).—Capital £100. To undertake research in connection with the marketing and distribution of goods and the availability of services in connection with pharmaceutical and allied trades or businesses, etc. Subscribers: Irene K. Sutherland-Oliver and James A. Lemkin. The first directors are to be appointed by the subscribers. Solicitors: Wild Collins & Crosse, 87 Duke Street, London, W.1.

GOSHO KABUSHIKI KAISHA (The Gosho Co. Ltd.). Capital stocks: 32,000,000 of 50 yen each. Registered in Japan. To export, import, purchase and sell domestic and foreign commodities, including wines, chemicals, fertilisers and measuring instruments, etc. British address: Finsbury House, Blomfield Street, London, E.C.2. Wakichi Ito, Flat 7, 20 Hallam Street, London, W.1, is authorised to accept service of process and notices.

PHABIO (PHARMACEUTICAL & BIOLOGICAL PRODUCTS), LTD. (P.C.).—Registered in Edinburgh. Capital £2,000. To carry on the business of manufacturers, distributors, exporters, and importers of and dealers in pharmaceutical and biological products, etc. Directors: P. J. M. McEwan, I. W. Noble, 8 Buckingham Terrace, Edinburgh, C. M. D. Barrow, and I. N. Lakar.

BUSINESS CHANGES

MR. P. G. TURNER, M.P.S., opened a pharmacy at 62 High Street, Ramsey, Hunts, on September 7. The business will trade as P. G. Turner (Chemist), Ltd.

W. A. WHARRAM, LTD., Bridge Works, Halton, Leeds, announce that they have been reluctantly compelled to close the manufacturing and wholesale sections of the business from August 31.

SOUTHALLS (BIRMINGHAM), LTD., announce that their sales organisation has been divided into two parts. Mr. A. K. Hunt (previously general sales manager) becomes sales manager, industrial division. Consumer products, including sanitary towels, surgical dressings, etc., will be covered by the remainder of the sales organisation with Mr. Harry Smith (previously assistant general sales manager) as sales manager, consumer products.

Appointments

ABBOTT LABORATORIES, LTD., 3 Wadsworth Road, Perivale, Greenford, Middlesex, have appointed Mr. D. S. Bannatyne the company's secretary.

IN the chairman's address accompanying the annual report and accounts

for 1956 of the Vitamins, Ltd., group of companies (see col. 1), it is announced that Mr. F. R. Crabbe has been appointed pha rmaceutical sales manager, also that Mr. R. M. Baddeley who has been advertising manager since June 1949, has now assumed responsibilities of marketing manager in p h a rmaceutical side of the company's business. Mr. Baddeley is also a director of Vitamealo (Sales), Ltd.

WILLIAM R. WARNER & CO., LTD., Power Road, London, W.4, have appointed Mr. Francis R.



Mr. R. M. Baddeley



Mr. F. R. Crabbe

Mr. Francis R. Elkins, M.P.S., a marketing executive in their ethical pharmaceutical division.

INQUESTS

Suicide with Barbiturate.—At an inquest at Sheffield on August 22 on Thomas Beaumont, aged seventy-four, Norton Lees Road, Sheffield, the coroner said that the man had taken a very large overdose of Amytal. A doctor gave evidence that a post-mortem examination had shown that about 40 gr. of the drug had been taken. Police evidence was given that the man had received a prescription for sixty tablets the previous day. There were only three left in the box which had been examined after Beaumont had been removed to hospital on August 14. A verdict of suicide while the balance of the mind was disturbed was returned.

Excessive Dose of Barbiturate. — At an inquest at St. Pancras, London, recently, a verdict that Mrs. Louisa Ellen Speed, aged sixty-two, Kingsford Street, Gospel Oak, London, N.W.5, died from an excessive dose of barbiturate was returned. She had been found dead with an empty box of sleeping tablets on a nearby table. The coroner commented: "I suppose it is just possible that she may have taken her life but there is no evidence of that, I am not satisfied that she did take her life as it is equally possible that she took the remaining amount of drugs she had left so as to sleep." A pathologist said that the overdose had not been gross. It could have been a deliberate overdose taken for the purpose of sleeping. Mrs. Speed had tried to commit suicide by cutting her throat fifteen months previously.

LEGAL REPORTS

Unlawful Possession Charge

AT Manchester, on August 28, when Julius John, aged thirty-six, Hartington Street, Moss Side, appeared on remand charged with being unlawfully in possession of 4 lb. 10 oz. and 394 grains of Indian hemp, a detective said that he was a distributor of the drug. It was stated that the amount of hemp could have been sold for £800. A large proportion of the packets had been prepared for resale. John was committed in custody to Manchester crown court for trial.

Cashier's Theft

AT Rugby magistrates court on August 28, Mrs. Eileen Ann Ellaway, aged thirty-two, 37 Vernon Avenue, Rugby, was summoned for, in the capacity of cashier to Boots, Ltd., Rugby, stealing £33 9s. 7d., belonging to her employers. She was also summoned for, with intent to defraud, omitting to make an entry in the cash statement book in respect of £20 18s. 7d. There was a further summons against her for, also with intent to defraud, omitting to make an entry in the cash statement book in respect of £12 11s. She pleaded guilty to all three offences. A detective gave evidence that the accused had been employed by Messrs. Boots from June 4 until July 28. It was the practice for the shop assistants to record the day's takings on a slip of paper and hand it in with the money to the accused, who was cashier. On July 27, Mrs. Amelia Brough, an assistant, took her own takings, £20 18s. 7d., and those

of another assistant, £12 11s., to Ellaway. Ellaway should have entered them on a sheet, but did not do so. In a statement Ellaway said she did not enter the money on the bi-weekly sheet, but put it in her handbag. She said: "I don't know why I took it." In court the accused said that she was sorry she took it and that she would pay it back. She was fined £20 on the first offence and put on probation for one year on each of the other two offences, the probation orders to run consecutively. She was ordered to pay £1 10s, costs.

Alleged Lipstick Theft

AT Liverpool, on August 27, Charles Douthwaite, aged thirty-seven, unemployed, Edgeware Street, Liverpool, was accused of stealing forty-eight lipsticks, total value £15, and committing damage to a plate-glass window, all the property of Boots, Ltd., Ranelagh Street, Liverpool, on August 23. It was alleged that Douthwaite went into the shop at 7.30 p.m., and said to the assistant "I feel rotten, give me something for my head." He was asked about a carton of lipsticks protruding from his jacket and he tried to push past the assistant who barred the way, but Douthwaite put his shoulder to the glass panel of a door but was unable to break the glass. He then took a flying

leap through the glass panel and ran away. Douthwaite was remanded on bail in a surety of £10.

MARRIAGE

BOYD—SANDS. — At Woodvale Presbyterian Church, Belfast, on August 15, William Andrew Boyd, M.P.S.N.I., 503 Crumlin Road, Belfast, to Patricia Sands, Belfast.

DEATHS

CRAIG.—On August 17, Mr. James Craig, M.P.S., 84 Albert Palace Mansions, Lurline Gardens, London, S.W.11. Mr. Craig qualified in 1931.

FOSTER. — At Ribblesdale, Moorland Avenue, Poulton-le-Fylde, Lancs, on August 24, Mr. James Foster, M.P.S., aged seventy-six. Mr. Foster was taken ill at St. Albans while touring the South of England with his wife. He had been in business in Poulton for forty-five years. He had been church warden. He is survived by his widow and a daughter.

SMITH.—On August 29, Mr. Thomas Arthur Smith, M.P.S., 142 Greenbank Road, Edinburgh, Mr. Smith qualified in 1913. He was chairman of Pinkerton, Gibson & Co., Ltd., Edinburgh. He had been with the company for over forty years as head of the laboratory.

PHOTOGRAPHIC NOTES

Bayonet-fitting Colour Filters.—North Staffs Photographic Services, Ball's Yard, Newcastle, Staffs, announce the introduction in this country of the Wata filter system. The filter holders are of the normal slip-on type, but the filter glass is held in either by a retaining ring or by a hood of bayonet construction, with the result that a filter can be changed or a hood fitted with a quarter turn. The filter glasses are of German optical glass and hoods up to 40-mm. in size are square.

Agfacolor Service.—Tempo Laboratories, Ltd., 80 St. John's Road, Tunbridge Wells, notify that until further notice the following times should be allowed for processing: 35-mm, colour strip sheets, black and white strip prints, b/w repeat orders and 120 colour strip sheets; developing only, developing and b/w contact printing, developing and b/w strip printing; and developing and colour-strip printing: four days; developing and b/w enlarging and developing and colour contact printing: eight days; colour enlarging and developing and colour enlarging ten days; transparencies from colour negatives or negatives from transparencies: fourteen days.

Improved Cine-camera Model. — Automatic view-finder selection, achieving greater operating speed, is one of many features of the new Bell & Howell 70DR 16-mm. cine camera. Restyled and developed from the 70DL, the new model is fitted with coupled lens and viewfinder turrets automatically geared into alignment. It has seven operating speeds: 8, 12, 16 (normal silent) 24 (for synchronising with sound), 32, 48 and 64 (slow motion) frames per second. Each speed is individually calibrated and governor-

controlled to assure accurate and constant exposure throughout a film run. The 3-lens turret, accommodating three standard-mount lenses, rotates for rapid change from standard to wideangle or telephoto lens. It is equipped with a standard 1-in. f/1·9 Super Comat coated lens or 1-in. f/1·4 Cooke Ivotal lens. The camera has redesigned satinchrome door-locks. Obtainable from 17 Hanover Square, London, W.1.

Plate and Sheet-film Prices. announcing a revised price-list for sheet film and plates as from August 16, Kodak, Ltd., Kingsway, London, W.C.2, point out that the changes reflect the impact of major increases in costs of materials and labour during the past few years. Small circums the past few years. past few years, Small sizes and packings involve a disproportionate increase in handling costs, packing materials, etc., as against larger sizes, and the amended prices have taken those factors into consideration. Prices of some of the larger-sized plates and films have been reduced. Panchromatic and orthochromatic materials, which have the same production costs and prices, have been adjusted to the same levels. Handling individual sheets of glass makes the costs of plates considerably higher than those for sheet film. For that reason, plate prices, which have been traditionally linked with those of sheet film, are now priced according to costs. Advances in manufacturing techniques have enabled the company to hold down prices of sensitised products by comparison with most other consumer goods (prices of the sheet films and plates have remained stable since 1951), but these improvements have in many cases been more than offset by heavy increases in the costs of labour and raw materials.

NEW PRODUCTS AND PACKS

Bath Salts Tablets.—Morny, Ltd., 22 Wadsworth Road, Perivale, Greenford, Middlesex, are making available in September assorted Morny bath salts tablets in boxes of six and twelve. Display material is being prepared.

Mascara in New Pack.—Pinaud 612 "tear proof" cream mascara is now available in black, brown, blue and green in a new plastic hinged-lid beauty box. Selling agents are Biometica, Ltd., Park Road, Barnet, Herts,

Eye-catching Packaging.—Yeast Pac beauty mask and Yeast Pac acne treatment are now being marketed in new "eye-catching" packaging by Yeast Pac Co., Ltd., Cromwell Road, London, S.W.7.



New pack for Susie's Perfect Cleaner supplied by Clay & Abraham (Manufacturing), Ltd., 2 Upper Duke Street, Liverpool, 1.

Liquid Rouge. — Luft-Tangee (London), Ltd., 329 High Holborn, London, W.C.1, are marketing a new five-tint



liquid rouge. It is being specially packaged in a gaily-coloured display box containing the range of natural, pink queen, old rose, red red and theat-rical red. The distributors are Thos. Christy & Co., Ltd., North Lane, Aldershot, Hants.

New Vitamin Preparation. — Parke, Davis & Co., Ltd., Staines Road, Hounslow, Middlesex, are marketing a new vitamin preparation, Paladac. Each teaspoonful (4 mils) contains vitamin A, 5,000 international units; vitamin

 B_1 , 3 mgm.; vitamin B_2 , 3 mgm.; vitamin B_6 , 1 mgm.; vitamin C, 50 mgm.; vitamin D, 1,000 I.U.; nicotinamide, 20 mgm. The preparation is packed in bottles of 4 and 16 fl. oz.

Pack Redesigned. — Warrick Bros., Ltd., Perkins Street, Coventry, are introducing new pack designs for their range of medicinal pastilles: Compound glycerin of thymol; glycerin, lemon and honey; glycerin and black-currant; cherry cough; and child's own cough. The new packs are available with all orders executed from September 1, together with an attractive display unit. Bonus terms are available during September and October.

Silicone-based Lotion. — Revlon Pharmacal Division of Revlon International Corporation, 86 Brook Street, London, W.1, are introducing Silicare, a medicated silicone-based lotion for hands and body. The lotion has been

tested and recommended by leading skin specialists.



New retail Paynocil pack (colours, ultramarine, grey and black) and the retail pack of junior Paynocil (cerise, grey and black), introduced by C. L. Bencard, Ltd. (See C. & D., September 1, p. 213.)

TRADE NOTES

Distributors for Lanolin Cosmetics.

—Fassett & Johnson, Ltd., 86 Clerkenwell Road, London, E.C.1, have been appointed sole distributors of Westbrook lanolin cosmetics.

Display Offer Closed.—Allen & Hanburys, Ltd., Bethnal Green, London, E.2, state that their special display offer for Acriflex has now been withdrawn.

Prices Reduced.—The Crookes Laboratories, Ltd., Park Royal, London, N.W.10, reduced the price of their bulk supplies of halibut-liver oil capsules, B.P., and capsules vitaminorum, B.P.C., N.F., on August 30.

Manufacturing Service in Australasia.
—Scott & Bowne (Australasia), Ltd., 50
Upper Brook Street, London, W.1, offer
facilities for local manufacture in Australia and New Zealand. They also
offer a distribution and complete marketing and advertising service in
Australasia.

Window Display Service. — A new window display service has been established by County Laboratories, Ltd., Honeypot Lane, Stanmore, Middlesex, to give expert advice on the choice and presentation of Silvikrin show material in shop windows. The service at present covers the entire London area and parts of Kent, Surrey and Sussex. The display experts operating the service consult retailers on their requirements and offer advice on how to get the best out of their windows and the display material made available to them.

Their Prices Stabilised.—Laboratory furnishers who are members of the BRITISH LABORATORY WARE ASSOCIATION have decided to stabilise the prices of the laboratory equipment and apparatus, other than chemicals, they manufacture and distribute, for a period of six months from September 1. The decision applies to the prices, for the home and export markets, fixed by each laboratory furnisher individually for its own proprietary goods and for non-proprietary goods and is subject to

the costs of materials and wage rates remaining stable. The Association approached the principal manufacturers of proprietary goods, for whom the Laboratory Furnishers act as stockists and distributors, and has obtained an encouraging measure of collaboration in this policy of price stabilisation. The Laboratory Furnishers will, however, have to charge for proprietary goods at the prices fixed by individual manufacturers. — BRITISH FILTERS, LTD., Maidenhead, Berks, are undertaking not to increase their prices, unless there are extraordinary unforeseen circumstances, during the next twelve-month period.

Bonus Offers

MERCK-SHARP & DOHME, LTD., Hoddesdon, Herts. Tyrozets. Seventy-two vials charged as sixty-six. For limited period.

SMITH & NEPHEW, LTD., Welwyn Garden City, Herts. Blue Velvet. One free bottle in each doz. on minimum order of £3; two free bottles in each doz. on order of £5 and over.

SPONCEL, LTD., 40 Chancery Lane, London, W.C.2. Spontex cellulose sponges. Twelve ninepenny sample size free with 3 doz, household size ordered on special reply paid card. Spontex cloth thirteen to the doz, on minimum orders on special reply paid card of 3 doz. Until October 31.



Sample of Preludin "appetite-controlling agent" as mailed to doctors by Pfizer, Ltd., 137 Sandgate Road, Folkestone, Kent.

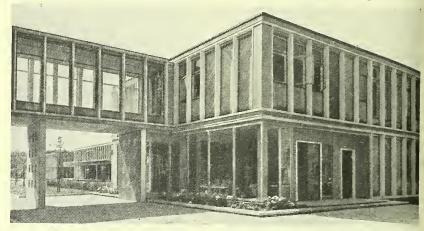
BRITAIN'S FIRST POST-WAR HOSPITAL

Pharmacy department shares advantages of contemporary planning

FIRST new general hospital to be built in Britain since the 1939-45 war is the Vale of Leven Hospital, Alexandria, Dunbartonshire. With an accommodation in normal times of 154 beds, the hospital serves the area from which it takes its name. But it is capable of rapid expansion as part of any Civil Defence programme and would, in an emergency, also help to serve the population of Glasgow. The corridors are especially wide and warmed, and the total of 154 beds could quickly be raised to 280. Auxiliary accommodation, such as kitchens, is also larger than at present necessary.

In Contemporary Style

The hospital has been built, decorated and furnished—even to the curtains in the chief pharmacist's office—in contemporary style. The various supply departments, including the pharmacy, central stores, sterile syringe service (not under the pharmacy department), and sterile supply service, are arranged around the arc of a semicircular hall, the hospital staffs obtaining their supplies through hatches, which are closed by kiosk-type roll-up shutters. Immediately behind the pharmacy department hatch lies the main dispensary. The department like the rest of the hospital, is fully equipped, and much thought has obviously gone into its arrangement. The interior decoration of the department, as of the other departments of the hospital, is in multitone colours, its wines, mushrooms, yellows and greens making a pleasant background. The planning of the department was largely the work of Messrs. Morrison Love (chief pharmacist, Department of Health for Scotland), J. S. Ley (chief pharmacist, Southern General Hospital, Glasgow), and T. Morrison (chief pharmacist, Western Infirmary, Glasgow). The final



A view of the new Vale of Leven Hospital.

arrangement of the equipment was done by the present chief pharmacist (Miss E. A. Meikle), who has the distinction of being the only chief pharmacist in a general hospital in the county of Dunbartonshire. As such she is responsible for the supply of drugs and dressings to other hospitals in the county.

Down each side of the pharmacy service hatch are arranged three locked cupboards, which can, in an emergency, be opened by the medical staff from outside the department to yield supplies of antidotes, transfusions, antibiotics, etc. The lockers are unbacked, enabling the chief pharmacist to see at a glance, from inside the pharmacy, what stocks have been removed. The pharmacy's main entrance is through a door in a passage which is parallel to the side of the department, this door opens on the left of the service hatch.

Inside the pharmacy the wall opposite the main entrance door contains

windows that extend nearly the full length of a working bench beneath them. On that bench most of the bulk supplies are prepared. At right angles to the bench is another double-sided one, the sides separated from each other by shelving and cupboards. On the side nearer the door the ward baskets are filled, and among the cupboards above the bench is one fitted with sliding glass doors, which may be locked, and pegs to hold rows of surgical instruments. The other side of the bench forms one leg of a U-shaped dispensing arena. A feature of the other leg of the U—which is the bench along the back wall of the pharmacy—is a Vitrolite ointment slab let into the bench surface and heated underneath by electric lamps.

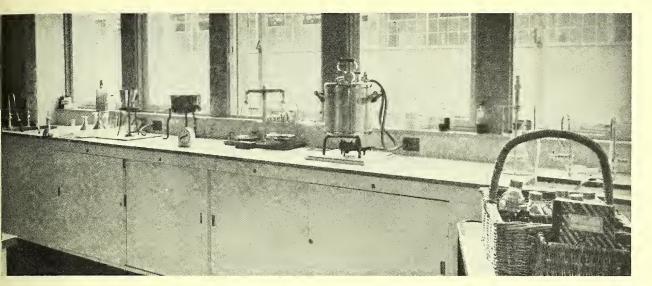
The equipment of the main pharmacy includes a refrigerator, a water still, stainless steel funnels, jugs and measures, and a small autoclave. The flooring is



The chief pharmacist (Miss E. A. Meikle) attends at the supply hatch. Note unbacked lockers for emergency supplies down each side of hatch. The lockers hold such items as antidotes, transfusions and antibiotics.



The chief pharmacist in her office, Furnishings including curtains (on left) are in contemporary style.



of sealed cork tiling. A corner of the pharmacy is partitioned off for the chief pharmacist's office. Access is obtained at the rear of the pharmacy to the main reserve store-room and aseptic

dispensing rooms.

The reserve store is roomy, with open wooden white-painted shelves of varying depths set above closed cupboards, which are topped by a wide working bench. There is space for a shelved fixture in the centre of the floor if needed in the future. A feature of the room is a set of lockers like those beside the service hatch in the main pharmacy. They open out on to the passage beside the department, and nurses can obtain from them, after the department is closed, supplies previously ordered. There is one locker for each of the six wards, theatre, nurses' home, and outpatients. The lockers are closed in the reserve store by a large door covering them all.

There are two aseptic dispensing rooms; the first is a preparation room leading into the aseptic room proper. The preparation room has a hot-air oven fitted with a booster for quick heating. There is a Chatwood York autoclave, the sterilising chamber of which is 19 in, deep by 24 in, in diameter. It is electrically heated, and can be dried off interelly in the word of the chamber of be dried-off internally by vacuum. The preparation room also has a sink equipped with arm-operating taps, and there is an Edwards vacuum pump piped to various points in the phar-macy. The aseptic room itself is situ-ated as far as possible from the main door of the department, and there is an air filter in the roof through which air is pumped into the room to maintain the atmosphere at slight positive pressure. A Hanovia bactericidal ultra-violet unit reflects ultra-violet from the ceiling, eliminating the need for the worker to wear goggles. Flush ceiling light is provided, and the walls and floor of the aseptic room are of terrazzo, and for cleanliness, the junction of floor and walls is rounded. Behind the reserve store and aseptic suite are store-rooms to which access is obtained only from the corridor outside the department.

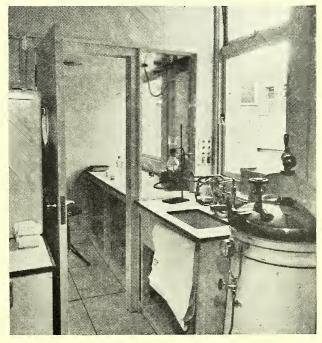
An unheated dressings store also



Top of page. Working bench with windows extending its full length. Most of the bulk supplies are prepared on that bench. Some of the stainless steel equipment of the pharmacy can be seen on the bench.

Centre, Reserve store; note set of lockers where supplies, previously ordered, can be obtained after the pharmacy department is closed. A hospital corridor runs behind the shelves shown. There is one locker for each of the six wards, theatre, nurses' home, and out-patients. The lockers are closed in the reserve store by a large door covering them all.

Foot, Preparation room leading into aseptic room.



houses the air-filtration unit for the aseptic room. Next door to it is a spirits store whose concrete floor slopes inwards so that, if any liquid is spilled, it does not run into the corridor and spoil its composition floor. Further along the corridor is a medical gas store from which oxygen and nitrous oxide are piped to the theatres and out-patients. A separate building which can be electrically-heated for the storage of inflammable substances is provided not far from the pharmacy department.

No Out-patient Dispensing

English readers may have expected to see some mention of out-patient dispensing, but in most Scottish hospitals out-patient dispensing is limited to items whose supply is restricted to hospitals by the Health Department.

MR. J. ALFRED WHITE, M.P.S., Shipley, Yorks, recently gave a talk on the subject of pharmacy to Shipley Rotary Club, His address was entitled "My Job."

MR. PHIL DRABBLE (production director, Geo. Salter & Co., Ltd.), appeared as "Storyteller" in a commercial television programme from Birmingham on August 27. Mr. Drabble said that much of his material came from the recollections and experiences of Tom Hobday, a well-known Salter "character" who retired recently after fifty-three years' service with the firm.

MR. MORRISON LOVE, M.P.S., who as chief pharmacist and pharma-

ceutical adviser to the Department of Health for Scotland was concerned with the planof the ning pharmacy department of the Vale new of Leven Hospital 240), (see p. was apprenticed to H. F. Scott, Ltd., Inverkeithing, Fife, and spent one year



with Pinkerton, Gibson & Co., Ltd., Edinburgh. After two years in the Army during the 1914–18 war, he qualified as a chemist and druggist in 1923. He was in retail business as an assistant and manager until 1941, when he became chief pharmacist at Stracathro Hospital, Brechin, Angus. He was at that hospital, which was one of seven large E.M.S. hospitals run by the Department of Health for Scotland during the 1939-45 war, for three years. He transferred to the supplies branch, Department of Health, in 1944, and took up his present appointment. He acts as adviser on pharmaceutical matters in the hospital service to all Departments and sections. The N.H.S. pharmaceutical services outside hospitals are not his responsibility.

MR. A. L. BACHARACH, M.A., F.R.I.C., after thirty-six and a half years on the staff of the Glaxo Labora-



View of main pharmacy. Assistant at rear is working at heated Vitrolite ointment slab let into bench

PERSONALITIES

tories, Ltd., retired on August 31. His services in a consultative capacity are being retained by the company for continued editorial work on The Glaxo Volume and on papers written by members of the company's scientific staff for publication in scientific and medical journals.

MR. PHILIP V. COLEBROOK whose appointment to the board of Pfizer, Ltd. (see p. 237) is announced, is an Associate member of the Institute of Chemical Engineers. Mr. Colebrook joined the company in 1952 as one of the first three senior executives engaged by the company. He has just returned from a visit to the United States during which he participated in discussions at which a major expansion of the company's manufacturing facilities at Sandwich was agreed. Before joining Pfizer, Ltd., Mr. Colebrook was on the staff of Parke, Davis & Co., Ltd.

MR. F. F. MARCHBANK, late principal, Ministry of Health, was the author of an article "What is Excessive Prescribing?" in the Supplement to the British Medical Journal dated September 1. His conclusion was that the evidence suggested the need for a more detailed examination of prescribing costs and their relation to other expenses, such as hospital treatment, loss of industrial output, and sick pay. A wealth of material awaited analysis in the pricing offices, but could not be used as long as the Department continued to starve the offices of staff on the ground that pricing was "unproduc-tive expenditure."

WILLS

MR. H. BALLANTYNE, F.R.1.C., F.C.S., Copt Hill Court, Burgh Heath, Tadworth, Surrey (former director, Unilever, Ltd., and a vice-president of the Royal Institute of Chemistry), left £169,636 (£165,769 net).

MR. R. BAYNES, M.P.S., 21 Abergeldie Road, Lee, London, S.E.12, left £4,446 (£3,567 net).

Mrs. A. L. Binks, M.P.S., 7 Queens Road, Middlesbrough, Yorks, left £4,449 (4,338 net). MR. B. BROOKE, M.P.S., 57 Blossom Street, York, left £18,613 (£17,819 net).

MR. W. V. BURLAND, M.P.S., 46 Woodbridge Road, Guildford, Surrey, left £3,696 (£3,625 net).

MR J. COOK, M.P.S., 46 St. Stephen's Street, Norwich (managing director, James Cook (Chemists), Ltd.), left £10,917 (£10,807 nct),

MR, L. G. DAVIES, M.P.S., 288 Holdenhurst Road, Bournemouth, Hants, lcft £1,488 (£848 net),

W. DELLAR, M.P.S., Avenue, Aintree, Liverpool, left £2,825 (£2,690 net).

MR. J. EYMER, M.P.S., 10 Hawthorn Crescent Hawthorn, Pontypridd, Glam, left £14,700 (£14,374 net).

Mr. J. Forbes, M.P.S., 16 Hampden Square, London, N.14, left estate in England valued at £7,251 (£7,196 nct).

Mr. J. S. HEARNE, M.P.S., 20 Church Lane, Scarthoc, Grimsby, left £5,718 (£5,668 nct).

MR, G. W. HOWARTH, M.P.S., 239 Church Road, St. Annes on the Sea, Lancs, left £6,314 (£6,253 net).

DR. J. K. 1RVING, M.B., B.S., 149 Harley Street, London, W.1 (consultant anæsthetist, Colonial Medical Service), who qualified as a

chemist and druggist in 1935, left £3,206.

MR, F. S. Lowe, Brookend, Lower Shiplake, Oxon (a former director, Cooper, McDougall & Robertson, Ltd.), left estate in Great Britain valued at £30,543 (£25,871 net).

Mr. G. A. MOFFAT, M.P.S., 23 Coudray Road, Southport, Lancs, left £3,053 (£2,469 net).

Mr. G. E. PASHLEY, M.P.S., 91 Green Lane, Dronfield, Dcrbys, left £20,466 £19,224 net).

MR. J. C. PENMAN, F.P.S., 26 Ettrick Grove, Sunderland, left £1,276 (£1,097 nct).

Mr. F. J. H. Purslow, M.P.S., 138 Argyle Road, Ealing, London, W.13, left £5,746 (£4,042 net).

MR, R. G. RICHARDSON, 49 1ddesleigh Road, Bournemouth, Hants (a former director, Scholl Manufacturing Co., Ltd.), left £4,055 (£3,931 net), MR, G. F. SHAW, F.P.S., 10 Church Street, Silverton, Exeter, left £1,541 (£1,506 net).

DR. F. SHERWOOD TAYLOR, St. Denis, Avenue, Crowthorne, Berks (director, the Science Museum, South Kensington, and formerly curator of the Museum of the History of Science, Oxford, 1940-50, a governor of the Imperial College of Science and Technology), left £12,274 (£4,568

net). MR. A. J. SNOOK, M.P.S., c/o Hotspur Lodge, Hanger Lane, Ealing, London W.5, left estate in Great Britain valued at £5,971 (£5,749 net).

MR. W. H. TAYLOR, M.P.S., 41 The Tything, Worcester, left £1,728 (£1,668 net).

MR. J. S. Tute, 234 Bourne Avenue, Salisbury, who qualified as a chemist and druggist in 1896, left £14,148 (£14,083 net).

51 Greek MR. T. K. WESTERMAN, M.P.S., Street, Stockport, Ches, left £272 (£171 net).

CHEMIST AND DRUGGIST DAILY BULLETIN



Pictures and reports of events and discussions at the ninety-third meeting of the British Pharmaceutical Conference Dublin, 1956.

TUESDAY, SEPTEMBER 4

OFFICIAL ORGAN OF THE PHARMACEUTICAL SOCIETY OF IRELAND



ASSEMBLING FOR THE OPENING SESSION: Group of Conference members photographed outside the Ambassador Cinema. The



OPENING SESSION: A view of the platform. Below it pressmen take notes of the proceedings.



THE CHAIRMAN LANDS: Professor Kenneth Bullock and Mrs. Bullock photographed on arrival by Aer Lingus 'plane at Dublin airport on September 1.



ARRIVAL ON HORSEBACK? Not exactly, but Mrs. and Mr. J. F. Grant (London), and Mrs. and Mr. A. G. Felton (President, London County Pharmaceutical Association) take to the saddle in a pre-Conference visit to the Gap of Dunloe, Killarney.

OPENING SESSION

Welcome by the Lord Mayor of Dublin

IN the presence of a full gathering of the delegates the ninety-third meeting of the British Pharmaceutical Conference opened at the Ambassador Theatre, Dublin, on Monday, September 3.

Prior to the opening sessions the delegates had coffee at the Gresham Hotel and the Metropole Restaurant.

MR. GRANVILLE SHAW (president of the Pharmaceutical Society of Great Britain), opening the proceedings, said:

"My Lord Mayor, Ladies and Gentlemen, it is my privilege, this morning, to welcome you most heartily to this, the ninety - third British Pharmaceutical Conference.

Since it was first founded in 1863, this Conference has met annually for the presentation and discussion of papers dealing primarily with the scientific aspects of pharmacy. The Conference also has as one of its objects 'the promotion of friendly reunion among pharmacy.' We have no doubt at all that the functions arranged for us in Dublin will enable us once again to meet old friends and to make new ones under the most auspicious circumstances. I should like to say right at the beginning of this Conference how grateful we are to our hosts, the Pharmaceutical Society of Ireland, especially to their President, Mr. McGrath, and all the members of his Local Committee, who have worked so hard to arrange the week's programme.

This year's Conference is also notable in that it marks the resumption of the discussion of subjects of a professional nature as part of the full Conference programme. In particular those of you who are regular Conference visitors will recall that since the Conference became formally associated with the Pharmaceutical Society of Great Britain in 1922, the discussion of subjects of a professional nature has been limited to meetings of representatives of the Society's Branches held during the Conference week, but organised separately. By agreement between the Council of the Society and the Conference Execu-

tive, the Branch Representatives' Meeting has been discontinued and replaced by the Professional Sessions of the Conference. I feel sure that this change, by making the Conference once again comprehensive in character, will add to its interest and value.

This is the fourth occasion the Conference has met in Dublin Previous meetings were in 1878, 1901 and 1929, and I am sure we are going to have a most fruitful and enjoyable week.



WELCOMING THE CHAIRMAN: Professor and Mrs. Bullock (right) are greeted on arrival by Mr. Granville Shaw (President, Pharmaceutical Society of Great Britain) (left), Mr. P. F. McGrath (President, Pharmaceutical Society of Ireland), and Mrs. Granville Shaw.

I now call upon the Right Hon. The Lord Mayor of Dublin to welcome the Conference to his 'Fair City'."

Lord Mayor's Greetings

THE LORD MAYOR OF DUBLIN (Councillor Robert Briscoe, T.D.) said it was his pleasant duty to extend to the delegates on behalf of the citizens of Dublin a very hearty welcome to their fair city. For him it was easy to extend that welcome because he knew that the Irish men and Irish women who made up the Irish Pharmaceutical Society would see to it that they enjoyed their visit here. He was sure everything would be done by the Local Committee to ensure that they took back with them the happiest recollections of their stay in Dublin. He understood this was the fourth British Pharmaceutical Conference to be held in Dublin. They were very grateful that the city had been selected for such important gatherings. He supposed that was because they liked Dublin and possibly also because they liked to provide the poorly (applying the poorly liked its people (applause). He was sure that everywhere they went, and were recognised as visitors by the people of Dublin, they would be given every courtesy and facility. He trusted that the weather, which had broken fine that morning, would continue fine for the entire week. He hoped the delegates had all found good accommodation and he was sure that the catering would be satisfactory. Mr. McGrath, who was responsible for the Irish side, would, he responsible for the Irish side, would, he was sure, have made it his husiness to see that they had as little time as possible for serious deliberations (laughter and applause). He did hope they would have a happy time in Dublin during Conference week. The cellar at the Mansion House might not be able to deal with such a large number but to deal with such a large number, but to those who had an opportunity and the time he extended a cordial welcome to that historic house, where they would be shown around. Finally he wished them a successful week and everything they desired for themselves (applause).

The Lord Mayor then withdrew.



INDIAN MEMBERS REGISTER: Mr. N. C. Chaudhry, Punjab, India, and Mr. L. D. Kapoor, Kashmir, India, receive their programmes from Mr. J. G. Coleman (Registrar, Pharmaceutical Society of Ireland) on registering at U.C.D. At left is Mr. G. Smith, Luton.

Continuing, Mr. Granville Shaw said: "It is now my duty to hand over the further conduct of this Conference to your chairman, Professor Kenneth Bullock. Professor Bullock has been a staunch supporter of the Conference for many years. He has presented numerous scientific papers, and we have no doubts that he will fully uphold the high tradition of the office which he occupies. It is, I think, particularly appropriate that Professor Bullock should be our chairman this year, the first Conference which he has attended since his appointment to the Chair of Pharmacy in the University of Manchester, an appointment which we all welcomed with the greatest pleasure. I now ask Professor Bullock to take the chair and to present his address.

DR. J. B. STENLAKE, proposing the vote of thanks from the floor, said that, to a great many pharmacists, the mention of biochemistry served as a reminder of earlier examination times. Most practising pharmacists were conversant with such diverse terms as enzymes, metabolites, bioassay, etc. Those widely differing branches of the study of pharmaceutical knowledge found common ground in biochemistry. The chairman, in his address, had given members opportunity to reflect on the importance of biochemistry to pharmacy. He had taken them from microorganisms to man, and had shown that the study of biochemical processes in blood and tissues was just as important to the pharmacist. He had opened their eyes to the links which existed between biochemistry and pharmacy, and had focussed attention on their importance. He had awakened their interest in the new developments which those links could bring in the future.

MR. J. B. LLOYD, seconding the vote of thanks, said that the chairman's address was in the best traditions of the Conference. It aptly illustrated the ever-widening frontiers of pharmacy. Professor Bullock had been a prodigious contributor to the scientific work of the Conference, and they in Manchester were particularly proud that that honour had come to him this year, to crown his occupancy of the chair of pharmacy at their own University.

No Difference

THE CHAIRMAN having acknowledged the vote of thanks, MR. D. J. KENNELLY (secretary of the Conference Local Committee) made some announcements, including the fact that the telephone number of the Conference office would be "exactly the same as published except that the last figure would be 8 instead of 6".

The session concluded,



DISCUSSING THE CONFERENCE AGENDA: Mrs. and Mr. A. E. Footitt, London, and Mrs. and Mr. W. J. F. Laxton, London.

CONFERENCE CHAIRMAN'S ADDRESS

BIOCHEMICAL PRINCIPLES IN CHEMISTRY

Enzmology: Chemotherapy: Disinfection: Dehydration and Life Processes: Cell Architecture

THE important contribution made to the pharmaceutical sciences by the application of the principles of biochemistry has been of rapidly increasing importance in the past few decades and I believe that its importance will increase even more rapidly in the future.

What is Implied

Biochemistry is the chemistry of living matter, or of the reactions occurring in living organisms. I have chosen to discuss, as examples, two principal biochemical topics: the importance of enzymes, and the importance of water in life processes and especially of its absence in the survival of life under adverse conditions.

One of the older difficulties of the biologist was to understand how plants and animals could, at temperatures below 40° C., bring about in their bodies reactions which, in the chemical laboratory, required high temperatures, high pressures and such powerful reagents as concentrated sulphuric acid and caustic alkali. The difficulty was solved by the discovery of the organic catalysts now called enzymes and known to be protein in nature. Many enzyme systems necessary to the normal functioning of the animal body are inhibited, or less often activated, by substances used as drugs; indeed the medicinal action of many drugs is believed to be mediated by such inhibition or activation Enzyme systems known to be essential to micro-organisms are also usually inhibited, sometimes specifically, by substances used as disinfectants.

by substances used as disinfectants.

Originally, antiseptics were simply substances preventing sepsis in wounds. Disinfectants rendered safe disease-carrying materials such as sputum and fæces or clothing, water and food, etc., in that, after disinfection, they no longer transmitted disease. With the development of medical bacteriology it became clear that many diseases—the infectious and contagious—were caused by development and multiplication of microorganisms within the tissues of the patient; the spread of such diseases is caused by the transfer of the causal organisms from diseased to healthy persons. It later became apparent that the prevention of such diseases was progressing along three lines.

(1) The study of antiseptics developed into chemotherapy—the search for and study of, such chemicals as would kill, without excessive damage to the infected host tissues, bacteria that had already gained access to the body.

(2) The study of disinfectants developed into the search for, and evaluation of, bactericides and bacteriostats substances capable of destroying, or preventing the multiplication of, bacteria in materials to be introduced into, or applied to, the body. (3) Immunology, which will not be considered further here.

Chemotherapy

Dursch¹ in 1785 was apparently the first to use the word chemotherapy but not until one hundred years later did the subject become important. Weigart¹ in 1873 studied the differential staining

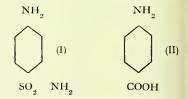


Professor Kenneth Bullock, Conference Chairman

of tissues and hacteria. Ehrlich noted that methylene blue preferentially stained plasmodia in the blood stream at concentrations which left the blood corpuscles and other tissues unstained. In 1884 Gram² described a stain which was fixed by some bacteria but not by others. Those observations gave rise to the idea that toxic dyes might be found which would kill invading bacteria.

The idea of a close relationship between dyes and chemotherapeutic agents dominated the minds of chemists, particularly German chemists, for over thirty years and led to the synthesis of suramin and mepacrine. The preparation (in 1932 by Meitsch and Klarer³) of a number of azo-dyes of sulphanilamide, shown by Domagk⁴ to have effective antibacterial properties, led to the modern views of chemotherapeutic agents as analogues of normal metabolites. It was soon realised⁵ that the antibacterial activity of those substances

was due to the *p*-aminobenzene sulphonamide grouping (I) which they contained. Woods⁶ and Fildes⁷ made the fertile suggestion that the *p*-aminosulphonamide residue exerts its bacteriostatic action by replacing competitively the essential metabolite *p*-aminobenzoic acid (II) to which it is structurally related.



In confirmation, it was shown that an excess of *p*-aminobenzoic acid could neutralise the bacteriostatic activity of several supplying and the confirmation of the co

several sulphonamides.

It has been suggested more recently that sulphonamide bacteriostasis may be the result of enzyme inhibition. In at least one case (pyruvate metabolism), p-aminobenzoic acid has been shown to antagonise the inhibition of the enzyme system caused by sulphathiazole. In some cases the inhibitory action of the sulphonamides may be antagonised by methylene blue or riboflavine, suggesting that "the inhibitions and anti-inhibitions are independent of structural similarity "8. Which of those explanations arity "8. Which of those explanations is finally established as being correct is a relatively minor matter. What is important is that two new lines of progress in chemotherapy have developed: (1) The elaboration and pharmacological testing of chemical analogues of essential metabolites (e.g., aminopterin which antagonises folic acid); and (2) the search for substances which inhibit essential enzyme systems of bacteria but do not seriously affect adversely the enzyme systems of the host cells.

Disinfectants, Bacteriostats and Bactericides

Koch⁹ in 1881 dried anthrax spores on threads which he dipped into disinfectant solutions for various periods of time. After being washed, the threads were transferred to fresh culture media. In that way it was possible to compare and ascertain the relation between concentration of disinfectant and time required to sterilise the threads. Kronig and Paul¹⁰ in 1897 replaced threads by more easily washed garnets. In 1903 Ridcal and Walker¹¹ did away altogether with the solid supporting material. A suspension of a suitable organism (often Bact. typhosus) was added in known amounts to a solution of the disinfectant in predetermined concentration. At intervals disinfection was tested for by transfer of loopfuls of the infected

solution to fresh broth. Phenol was used as the standard. Five years later Chick and Martin¹² suggested making the test less artificial by causing the disinfectant to act in the presence of fæces—and methods proposed by later workers have mainly been variations of those original techniques. Professor Berry¹³, in his address from the chair at the meeting of the British Pharmaceutical Conference at Harrogate in 1951. dealt fully with the uses, disadvantages and abuses of the Rideal-Walker type of test. At the beginning of the century Chick¹⁴ was led to compare the rate of disinfection with the rate of a unimolecular reaction. That use of the word unimolecular was unfortunate. Chick herself was quite clear that the reaction could only be bimolecular. In fact she established that the approximation to first order kinetics was superficial.

Evaluating the Action

A most thorough attempt to analyse and evaluate the overall action of disinfectants on bacteria was made by Barry and Michaels15, who utilised extensively statistical and probit analyses originally devised by pharmacologists for bioassays. It has become obvious that the simple Rideal-Walker type of test, if carefully interpreted, is sufficient to ascertain the strength of disinfectant necessary in sanitary work. In problems connected more directly with surgery and the production of injections and other sterile pharmaceutical prepartions and especially at the academic level the search for a method of evaluating disinfectants must be replaced by a study of the way in which different disinfectants affect the biochemical and biophysical processes of different micro-organisms. The same conclusion may also be reached by a study of the results obtained by those workers whose original object was the study of the biochemistry of micro-organisms, and who went on to investigate the way in which normal metabolic processes may be modified by the addition of chemicals which are also used in higher concentrations as disinfectants. It is not just a question of the life or death of the organism. Small quantities of certain chemicals may modify the fermentative reactions by means of which an organism obtains energy, while higher concentrations kill. A familiar example is the manufacture of glycerol by fermentation in presence of sulphite, yet sulphites are widely used in the preservation of, for example, fruits. Mercuric salts inhibit sulphydryl enzymes and kill micro-organisms16_19. If the mercury is not present in too high a concentration both those processes may be reversed by sulphides or similar agents 20 21. If the concentration of disinfectant is increased to such an extent that many metabolic pathways are interfered with, the Different disinfectants organism dies. first attack different metabolic processes. Poole and Hinshelwood²² suggested that some disinfectants interfere with the synthesis of metabolites essential for cell multiplication and prolong the lag phase of growth so that the organisms die before they multiply. Other disinfectants inhibit the rapid metabolic processes characteristic of the lag phase,

while yet others interfere with the life processes of the mature organisms in t h e stationary phase. Organisms damaged, but not killed, by heat or disinfectants, when plated out and incubated, take longer, sometimes much longer, to form colonies²³. It is believed that different groups of disinfectants act in very different ways. Phenolic substances coagulate protein generally, and that of course includes enzymes. Certain heavy metals such as mercury inhibit sulphydryl enzymes. It is not certain how the surface active quaternary ammonium compounds act but one suggested mechanism is by alteration of cell permeability. Leakage of nitrogen and phosphorus-containing from cells exposed compounds anionic and cationic surface active agents has been reported²⁴. It appears that the germicidal activity of acridine dyes depends upon their degree of ionisation and resides in the cation. It has been suggested that the acridine cation injures bacteria by competing with hydrogen ions for vital positions on dissociable acidic groups of respiratory enzymes²⁵. The picture is still further complicated by the phenomena of adaptation and mutation. Microorganisms are capable of adapting themselves to utilise, by fermentation, a substrate which at first they could not attack. There has been much discussion about whether they do that as a result of stimulation by the new substrate, or whether the substrate favours the survival of mutants which can ferment it. Pharmacists are well aware, too, that organisms grown in the presence of low concentrations of chemotherapeutic or antibiotic agents or disinfectants may become adapted to their environment by development of resistance.

Mutations

Micro-organisms, when exposed to deleterious agents, especially heat, x- or β-rays or low concentrations of certain chemicals mutate, giving rise to progeny lacking some, or equipped with different, enzyme systems. Those agents are considered to act by destroying or altering the morphologically uncharacterised genes of the cell. Some geneticists have postulated the equivalence of one enzyme corresponding to one gene26. Often such mutated organisms survive, but heat, x- and β -rays in greater intensity cause disinfection. The action seems to be progressive. Kilner²⁷ reported that organisms killed by ultraviolet light could be reactivated by visible light. It has been postulated that absorption of one quantum of energy kills a bacterium provided that it hits a sensitive "target". Leu, Hains and Britscher²⁸ have calculated that an *E. coli* organism contains about 1000 such targents, of 8.6 μ diameter, i.e., equivalent to the size of a molecule with a molecular weight of 2×10^5 . ideas are reminiscent of the bimolecular theory of disinfection, and Hinshel-wood²⁹ has expressed his difficulty in believing that cell organisation is so dependent on localised structures that a single quantum of energy or a single molecule of poison can possibly disrupt it. Those who would attribute a very simple mechanism to disinfection should

bear in mind that, from a biochemical point of view, the unicellular organisms are more complex, possibly more highly evolved, than the cells of the higher animals. The mechanism of disinfection is likely in most cases to be a complex. If complex, the disinfectant must be adsorbed or otherwise taken up by the outer membrane (possibly passing a lipid barrier) into the cellular cytoplasm; react with some enzyme system progressively or instantaneously, reversibly or irreversibly. The organism may at first respond by using alternative metabolic pathways. Later, owing to increasing local concentration of disinfectant, the disorganisation increases to such an extent that the capacity of the cell for division and growth is lost (bacteriostasis). Subsequent to inhibition of normal metabolism (and there is evidence that anabolic are more inhibition-sensitive than catabolic pro-cesses) lytic reactions may occur³⁰ to such an extent that normal metabolism cannot be restored (bactericidal action). It is small wonder that the time-survivor curves of disinfection processes are not straight lines!

Activity Related to Structure

Not only in the field of antibacterial action has enzymology become impor-As soon as it was realised that nerve impulses are transmitted across gaps, whether in the nervous system itself or between nerve ending and muscle, gland or other end organ, by means of chemical substances the importance of biochemical considerations as a basis for explaining pharmacological activity became apparent. For peripheral sympathetic nerve endings the trans-mitter is noradrenaline or adrenaline, for the rest of the nervous system there is good evidence that the transmitter is acetylcholine and it is to this latter, as an example, and to the neuromuscular junction that present remarks will be confined³¹. If an impulse is transmitted by a chemical substance the end organ will probably continue to be stimulated until the substance is destroyed. A new impulse can then be carried by freshly liberated substance. Acetylcholine exists in a bound, inactive form at nerve endings, a nerve impulse liberates some free acetycholine and such is the local concentration of acetylcholinesterase that the liberated acetylcholine can be com-pletely destroyed locally before the arrival of the next nerve impulse³². Acetylcholine thus "fits" the molecular surface of the muscle end-plates and initiates a contraction; and "fits" the surface of the acetylcholinesterase molecule and is fairly easily hydrolysed by it. Any substance therefore which interferes with those activities may show resultant, characteristic, pharmacological activity thus:— (1) The substance may "fit" the active enzyme surface but be hydrolysed by it slowly or not at all (i.e., it may be a simple inhibitor of acetylcholinesterase). Such drugs, on injection, act in many ways like injection, act in many ways like acetylcholine since by inactivating the enzyme they preserve that substance when liberated locally at the nerve endings. Examples are eserine and dyflos (diisopropylphosphorofluoridate, DFP) but whereas the inhibition pro

duced by the former is reversible and the pharmacological action comparatively transient, dyflos causes irreversible inhibition, and prolonged action and fresh enzyme must be produced by the body before normal physiological function is restored. (2) The substance may "fit" the end-organ surface but not be hydrolysed so easily by the acetylcholinesterase. In that case it may stimulate the end organ in the same way as does acetylcholine and have an action similar to acetylcholine but of longer duration (e.g., carbachol) or may fail to stimulate the end organ, but cover it and prevent stimulation by acetylcholine. Should the end organ being considered be skeletal muscle, neuromuscular block will then result—the reverse effect of an injection of either drug belonging to group (a) or of a drug with anticholinesterase activity.

It has been suggested that the different spacing of the active centres at neuromuscular junctions and synapses explains the difference in the actions of pentamethonium and decamethonium, which have corresponding differences in carbon chain length³³. Acetylcholine is a quaternary ammonium compound so that other members of this class are analogous. Since something is known of the structure and special relationships of the active centres on acetylcholinesterase, a comparison of the anticholinesterase activity of these analogues with their relative neuromuscular blocking effects may throw light on the molecular structure of the parasympathetic receptors.

Local anæsthetics possess considerable anticholinesterase activity and at one time it looked as though that might explain their ability to block the conduction of sensory nerve impulses. It has been claimed³⁴ by some, though without evidence yet, that the action-current is propagated along the nerve fibre by liberation of acetylcholine, followed by its hydrolysis by acetylcholinesterase resulting in restoration of the resting potential. Local anæsthetics are anticholinesterases, and it was tempting to think that they might act by inhibiting the acetylcholinesterase and so prevent-ing the restoration of the resting

Such a theory would involve the conclusion that all antiacetylcholinesterases should block nerve conduction when applied locally. It has been shown that that is true to some extent for eserine and dyflos³⁵, the block, like the anti-cholinesterase inhibition, being reversible with the former but irreversible with the latter36. On the other hand, neostigmine, comparable to eserine in anticholine-sterase activity, does not block nerve conduction. That, however, has been shown to be due to the fact that neostigmine is a strong water-soluble quaternary ammonium base which cannot penetrate the lipid nerve membrane, while eserine, a tertiary amine, can35.

There are, however, other difficulties. If acetylcholine is associated with a depolarised nerve membrane and local anæsthetics prevent the disappearance of acetylcholine then anæsthetised nerve membranes should presumably be depolarised. It has been shown that nerve membranes blocked by direct application of procaine solutions are not

depolarised37. Further, when many local anæsthetics were placed in order of increasing anæsthetic potency they were approximately in order of increasing ability to inhibit pseudocholinesterase of serum but not in order of increasing ability to inhibit acetylcholinesterase of brain tissue³⁸. Those difficulties may not be insuperable. between potassium and sodium ions and acetylcholine and depolarisation and restoration of resting potential are by no means established, and pseudocholinesterase as well as acetylcholinesterase regularly occurs in most parts of the nervous system. In future the development of drugs designed to act on the sensory nervous system, such as local anæsthetics, or neuromuscular blocking



Mr. Michael Costello, Vice-chairman of the Local Committee

agents at skeletal neuromuscular junctions may be closely bound up with the study of the mechanism of transmitting the nerve impulse and linked with acetylcholinesterase inhibition or pos-sibly activation. The older methods of research in therapeutics consisted in testing, largely empirically, vegetable and animal extracts and isolated chemiprinciples for their therapeutic possibilities.

By the new approach normal biochemical processes are compared with abnormal processes of disease, particularly at the cellular and enzyme level. The next step is to find or synthesise substances, usually analogues of normal metabolites, intermediates, or enzyme substrates, that will replace, inhibit, side-track or otherwise overcome the abnormal process or so activate the normal processes that recovery takes

Pharmaceutical Enzyme Preparations

As far back as 1783 Spallanzani39 demonstrated the liquefaction of meat by the gastric juice of hawks. In 1836 Schwann described and gave the name pepsin to the proteolytic enzyme of gastric juice. Pepsin, in the crude form of the dried stomach lining, was introduced in the 1874 "Additions" to the duced in the 1874 "Additions" to the British Pharmacopæia of 1867. The action of pancreatic juice on albumin was observed in 1836. A preparation of pancreatic engage. pancreatic enzymes (Pancreatic Solution) became official in the British Pharmacopœia in 1898.

Vegetable digestive enzymes were also discovered about the same time. It is impossible to say how long it has been known that the juice of Carica papaya and other species of Carica has an energetic action on meat. The enzyme preparation was first studied in 1878 and the name papain given by Wurtz in 1879. It was given a monograph in the first British Pharmaceutical Codex in 1907, has had extensive trials in the cleansing of wounds and burns, and has also been used in dentistry40. Pepsin and pancreatin remain in the British Pharmacopæia and papain in the Codex.

It was thus towards the end of the

nineteenth century that the digestive processes were described in terms of enzyme action in a specific manner, the specific enzymes being separated and studied. That led also to the malted and predigested foods still widely used. The treatment of faulty digestion by use of pepsin or pancreatin is as much an example of modern replacement therapy as the alleviation of diabetes by injection of insulin.

Enzymes in Analysis

The use of enzyme inhibition as a sensitive analytical tool has been suggested. Cholinesterase is inhibited by eserine in concentration as low as 10-7 molar and that reaction has been used to estimate eserine in galenical preparations41 and toxicological work42. Anticholinesterase drugs are used in medicine in low concentration. The 1-mil ampoules of injection of neostigmine methylsulphate contain only 0.5 mgm. of neostigmine. In a paper to be read at this Conference it will be shown that there is more than enough neostigmine in a single ampoule for its concentration to be estimated, and with less than a 10 per cent. error, by means of cholinesterase inhibition. Similar methods will identify and estimate mustine hydrochloride.

Survival in Low Moisture

If the maximum density of water had happened to be below 0° C. instead of at +4° C. ponds and seas would have frozen from the bottom upwards. There would have been no thin layer of ice on the top to protect aquatic forms of life from the effects of the cold. Alterations, not very great, in the vapour pressure and hence in the boiling point and rate of evaporation of water would have rendered impossible anything approaching our present climate with the beneficient circulation of water from the seas to the atmosphere and on to the land. One might say that, if hydrogen bonding of water molecules had not occurred, evolution must have had a very different pattern. Having often amused myself by speculation along such lines, I was naturally most interested in the work of Baker⁴³ (1902 onwards) demonstrating the imonwards) demonstrating the importance of water as a catalyst in inorganic chemistry. Sulphur and phosphorus may be distilled unchanged in oxygen in the entire absence of moisture. Oxygen and hydrogen combine only slowly under such conditions, no explosion occurring even in the presence of a spiral of silver wire heated almost to melting point⁴³.

Those considerations led me to study

the behaviour, especially the survival or nonsurvival, of enzymes and microorganisms in systems of low moisture content. It was fortunate for me that pharmacists are interested in the sterilisation of two such systems (powders and oils) so that it was possible to work in such a way that the results might be useful as well as being of academic interest.

Moisture and Heat

In some preliminary work, it was found possible to heat pepsin powder for one hour at 120° C. without appreciable loss of activity. Later⁴⁴ it was shown that the amount of moisture present in the powder during heating was a crucial factor for the survival of enzyme activity. Heating for one hour at 110° C. left the activity unchanged, if the powder had previously been dried over P₂O₅, but resulted in the loss of all activity in case of a damp, but still free-flowing powder heated in a closed container. Heating in an open dish led to rapid escape of moisture from the powder, only a portion of the activity being lost. If the powder were suspended in oil before heating, moisture was still an important factor. For a given moisture content of the powder the loss in enzyme activity was less than if the powder had been heated in a closed vessel, but more than if it had been heated in an open dish. Possibly some of the water diffused into the oil.

Drying renders enzymes more stable not only to heat but also to other agents. Moist acetylcholinesterase is destroyed by treatment with acetone or ether but dried brain tissue may be repeatedly extracted with either acetone or ether without loss of acetylcholinesterase activity 46.

In experiments in which a spray drier was used to produce the powders, it was shown that many delicate enzyme systems and easily oxidised substances such as adrenaline and ascorbic acid could be spray-dried in a current of air having an initial temperature of up to 120° C. without loss of activity⁴⁷. The preservation of these delicate substances was attributed to very rapid drying and subsequent stability in the absence of moisture.

Preservation by drying applies not only to enzymes but also to micro-organisms. It has long been known too that spores may remain alive for long periods of time in such powders as dust or dry earth. More recently the preservation of bacterial cultures by freeze-drying has made familiar to us the idea of conserving even the more delicate types of vegetative bacteria for considerable periods of time in the dry state. freeze-drying process48 usually results in some destruction which may amount to over 90 per cent. of the total population. Once dried the organisms are comparatively stable49 50.

Many bacterial species when desiccated will resist temperatures of over 100° C. for 10-60 minutes⁵¹, while spores may withstand 130° C. for over three hours.

By a process of spray drying⁵², powders were obtained containing a known

By a process of spray drying⁵², powders were obtained containing a known number of micro-organisms (usually vegetative bacteria or spores) in even distribution⁵³. It was possible to in-

vestigate quantitatively the effect of moisture on the death-rate of organisms in such powders when exposed to either high temperatures or bactericidal chemical agents. The following conclusions were established: (1) Vegetative organisms (Bact. lactis ærogenes in peptone powders) are more susceptible to heat destruction than is the enzyme lipase. They are, however, much more resistant to heat in the dry than in the wet state. Whereas 50 per cent. of the bacteria were killed in thirty seconds at 55° C. in liquid suspension it took about forty minutes at 70° C. in the dry state to produce the same mortality. (2) The thermal resistance of spores in powders resembles the thermal resistance of enzymes in dry powders. (3) Even in



Mr. H. P. Corrigan, Conference local treasurer.

the dry state vegetative bacteria are much more susceptible to heat than are spores; one hour at 110° C. destroying all the former, while one hour at 140° C. was necessary to destroy all the latter. (4) As with enzymes, vegetative bacteria were more easily killed by heat in moisture-containing powders than when quite dry. 7.2 per cent. moisture lowered the temperature for killing in one hour from 110° C. to 90° C. provided the heating was carried out in a closed container. In an open container the majority of the water was removed so quickly that it had little effect. (5) Some unexpected results were obtained with B. subtilis spores. One hour at 140° C. was required for sterilisation whether the powder was dry or contained 7.3 per cent. moisture and whether the containers were open or closed. That result may have something to do with the impervious nature of spore coats. Heat susceptibility may well be influenced by the moisture content of the bacterial cell⁵⁴ rather than by that of the ambient medium.

Moisture and Disinfectant Action

In earlier work experiments could never be repeated exactly, since the next sample of dust or soil might contain quite different organisms of quite different resistance. In the later experiments known organisms were used, but the distribution was uneven. In all experiments there had no doubt been extensive but unascertained death of organisms during the drying process, so that it was a selected sample of viable organisms which was stored, heated or ex-posed to disinfectants. Later the much superior method of freeze-drying bac-terial cultures was introduced and it was established that even vegetative bacteria may survive in the dry state for many years especially in evacuated tubes55. However, not much work was done on the rate at which they die⁴⁹ ⁵⁶ ⁵⁷. After drying, the immediate death rate was often high. The proportion of organisms viable after some months might be less than I per cent, of those originally present in the suspension. Some of the difficulties associated with the work were overcome by the use of the spray-dried powders described above⁵³ ⁵⁴.

By spray drying, Bact. lactis ærogenes was killed to the extent of 98 per cent. under the conditions most favourable for survival, and the resultant powder had to be milled before an even distribution of the bacteria was obtained. Using peptone as the supporting material, the viable count of the dried powder fell rapidly from 542,600 to 6,400 in thirtyseven days, but with Str. fæcalis starting with 10,000,000 per gm. it was possible to obtain powders containing 3,000,000 organisms per gm. after one week, 40,000 after a month and 2,000 after six months. Though there is a considerable death rate in such powders, they can be used to investigate the extent to which disinfectants increase the rate of kill. Experiments with the spores of *B. subtilis* proved to be relatively easy, since over 95 per cent. of the spores survived spraydrying and the survivors proved to be evenly distributed in the resultant powders. During the process there must have been a considerable rise in osmotic pressure, especially in the presence of salts, while it is difficult to forecast what happens to the hydrogen-ion concentration or indeed to understand its significance in concentrated solutions or pastes. Micro-organisms are sensitive to to the nature of the medium in which they happen to be, and it was therefore of interest to dry the spores of B. subtilis on a variety of salts, using high air-inlet temperatures⁵⁸. Acid and alkaline salts were used and it was known that in some cases at the high air-inlet temperatures anyhydrous salts resulted⁵⁹. The spores were remarkably resistant. Fifty per cent survived drying on sodium chloride and more than 30 per cent. survived drying on sodium carbonate. Phosphates seemed almost to have a conservative action. On sodium acid phosphate more than 95 per cent. survived, so that the salt had no more harmful effect than peptone. Even such chemically active salts as sodium nitrite, potassium chlorate and calcium formate did not result in sterility, 2, 22 and 26 per cent. respectively of the spores surviving the drying process. At first it had appeared possible to sterilise materials by introducing relatively small quantities of disinfectants into the solutions before spray-drying. Spray-drying spore suspensions in solutions containing 0.5 per cent. phenol, 0.2 per cent. chlorocresol, 0.002 per cent. phenyl mercuric nitrate or 0.5 per cent, resorcinol in all cases resulted in less than 30 per cent. mortality⁵⁸.

By combining the usual bactericides with salt solutions, surface-active agents and high air-inlet tempertures, the percentage mortality could be increased but not above 90 per cent. Sterility was obtained by drying the *B. subtilis* spores in peptone in the presence of 0.4 per cent. formaldehyde but that is not surprising since formaldehyde is a volatile bactericide which may be used to sterilise dry powders⁶⁰.

These results strikingly confirmed the non-destructive effects of the spraydrying process. Not only is there little temperature destruction of spores even with air inlet temperatures up to 190° C., but the drying is so rapid that any disinfectant present has no time to be effective, even though its concentration is rapidly increasing. In the absence of moisture, disinfectants are practically inert unless volatile.

Having obtained powders containing known numbers of named vegetative bacteria or bacterial spores, it became possible to ascertain the effects of mois-



TWO PRESIDENTS CONFER: Mr. Granville Shaw in conversation with Mr. P. F. McGrath.

ture content on the viability of the organisms in such powders on storage. B. subtilis spores in powders sufficiently dry to be free flowing remained viable practically indefinitely. It appeared likely that there would be a critical moisture content of the powders (or concentration of peptone solution) at which the spores would germinate but the resultant bacteria would find the conditions unfavourable for growth. There were in fact found to be two critical moisture contents (1) one of 50 per cent. for peptone powders, 10 per cent. for lactose powders, below which the spores did not germinate but remained viable and resistant; (2) a much higher water content at which germination and multiplication of the vegetative forms took place in the presence of nutrient. Between the two critical moisture contents the spores germinated, but the resultant vegetative forms, far from multiplying, died. Indeed, at one time we had hoped to be able to sterilise powders by increasing the moisture content sufficiently for the spores to germinate and die and then simply redrying the powders. Unfortunately the critical moisture content required for that purpose always resulted in the powders becoming pastes, which introduced technical difficulties in redrying⁶¹.

Moisture and Disinfectant Action in Oils

Oils and fats constitute systems of low moisture content in which bacteria may occur. It was found that those systems could be contaminated by stirring in infected powders⁶². The bacteria might be surrounded by a layer



A HELPING HAND from Mrs. E. R. Clark, Leeds, for Mrs. J. G. Dare, Leeds, in pinning on the Conference badge.

of dried medium such as peptone and so not be in direct contact with the oil or fat. In some experiments that objection was overcome by spraying a bacterial suspension in an acetone



CONFERENCE CHAIRMAN AND LOCAL VICE-CHAIRMAN: Professor Bullock with Mr. Michael Costello.

solution of The stearin. resultant infected stearin was mixed with oils or fats to give the required suspension.

Three conclusions emerged from the work. (1) Spores (B. subtilis) may remain viable and resistant in oils for long periods of time (over two years), even when the spores have been freed from surrounding solid autriant media. from surrounding solid nutrient medía. (2) Vegetative organisms (Str. facalis) die in oils at about the same rate as in the powder used to infect the oil. The oil does not increase the death rate and the experiment can be so arranged that, after six months' storage, the oil may still contain 100,000 organisms per (3) Introducing disinfectants even in high concentration (for example, 2 per cent. chlorocresol) into the oil suspension has little, if any, effect on the viability of spores or vegetative organisms. Though spores remain viable in powders and oils for long periods of time the degree of contamination of powders and oils was never found to increase on storage.

(To be Concluded)



STATE RECEPTION: Mrs. T. Butler with her father, Mr. P. F. McGrath (President, Pharmaceutical Society of Ireland), and Mrs. R. J. Kelly with her brother-in-law. Mr. P. O'Donnell (Minister for Local Government) receiving Mr. and Mrs. E. Knott, Edinburgh, at the State reception and dance at the Gresham Hotel, Dublin.

"OPEN SHOP"

UNSCRIPTED COMMENTARY ON THE SPECIAL PROBLEMS OF THE PHARMACIST IN RETAIL PRACTICE

By E. C. TENNER

HAT a vital and provocative synopsis of facts and fantasy September 1956 provides for pharmaceutical discussions during the coming months. We have Mr. Tomski on keeping up-to-date, and Mr. Adams on professional good manners, against a not very bright background of hopes for a satisfactory termination of the N.H.S. remuneration negotiations, the end of collective price maintenance and a summer that never was.

An Absurd Position

Talk of knowledge and high ethical standards enhancing the professional status of pharmacists will sound very thinly in our economic atmosphere until the Ethical Committee of the Society's Council and the Statutory Committee between them take action to prevent self-styled "rebels," who would be better described as "pirates," enriching themselves by exploiting the public-spirited and professionally good behaviour of the majority of pharmacists in retail practice. In our curiously British way of life a pharmacist does not prosper because he is a good pharmacist, to continue in practice he must also be a good "business man"; on the other hand a bad pharmacist can prosper exceedingly as long as he has the sometimes dubious virtue of being a good business man. The position is even more absurd than that, because the more scrupulously does the good pharmacist observe the Society's Statement on Matters of Professional Conduct the more does he place himself at a business disadvantage compared with the hard-faced pirate who does not hesitate to cash in. The more I think about it, the more it seems that the famous Statement will constitute no more than a hunting ground for pirates and a danger to good pharmacists until the Council and the Statutory Committee find a way of using their powers to prevent members of the profession from breaking the rules. A start could be made by stricter enforcement of the Pharmacy and Poisons Act, and by taking steps to see that the Shops Act and Sunday Trading Act are observed by pharmacists. Unfortunately it will be necessary to make examples of individuals and there is sure to be a great outcry, primarily from the principal offenders, who will complain of loss of "freedom" and "snoopers." But the Council must be determined in action. Vested interests will oppose such a policy, but only when it is seen that the Council means what it says will its Statement gain the respect and confidence of pharmacists and the public, and our status as pharmacists improve.

When it is seen that all pharmacists do adhere to the same high standards of behaviour it will also become apparent that they are the safest channel for the distribution of new medicines (and indeed all medicines) to the public. It will be accepted that pharmacists can be trusted not to push the sale of drugs with unknown potentialities purely for commercial gain and at the public risk, "I'm all right, Jack," is a funny music-hall gag, but if it becomes the financial policy of a pharmacist seller of medicine, the Pharmaceutical Society ought to do more than issue statements to its members.

The hard bargaining of the Treasury, through the Ministry of Health, over N.H.S. remuneration inevitably tends to direct a contractor's attention to ways in which he can reduce the costs of the service he gives, and so may efficiency and standards be endangered. The assessed increased cost of 0.3d, on each container is an illustration of the knife edge



on which a large proportion of our livelihood is balanced. The only professional aspect of the service and remuneration is the dispensing fee. It has always been my contention that we should leave the accountants to argue about all the other ingredients of the cost and fight for a proper and completely separate professional fee. The "global" or "Qucen's" shilling is regarded by all of us as an inadequate fee for dispensing a medicine, but how many of us invariably charge the rare private patient the retail price of his ethical proprietary medicine plus a dispensing fee of at least one shilling? Fear of the unethical behaviour of our fellow pharmacist in cutting our price is the reason we often do not dare to make even the shilling charge that we tell the Ministry, our best customer, is not sufficient; and we call ourselves professional! When pharmacy is solidly loyal we shall not need to sigh for

An Attractive Shop Necessary

It should not be imagined that there is not plenty of scope for a good pharmacist to be a good business man and so to survive. The revolutionary conditions obtaining today require a revolutionary, or dare one say scientific outlook. One must be prepared to examine old customs and traditions and not hesitate to discard what is no longer useful. I would illustrate that remark by stating that while I regard the old carboy of coloured liquid as a most valuable asset to a modern pharmacy, flashy neon lighting should only be used with great caution. The good pharmacist can strive to make his business a financial success, not by keeping just within the letter of the law and by playing tricks with ethics, but by attracting and satisfying customers with his shop and his services. The shop must appear characteristic and attractive, not conventional but in dignified good taste. Modern materials, good design, colour, light, and temperature must be exploited. The shop must be easy to shop in, with wide, open door and open displays, too. It should be made especially attractive to women who do most of the shopping.

The dispensary should be in a central position and should be labelled as such in good lettering, there should be a public view of its interior showing clean white paint and tiles. Comfortable waiting accommodation is needed, room for prams and children. It must always be remembered that those who purchase medicine or bring prescriptions need specially sympathetic treatment and they do appreciate a word with someone in authority. The dispensary must maintain a good reference library. The job of keeping a pharmacy up-to-date and prosperous is one of the most absorbing challenges a pharmacist can meet, The N.P.U. and the Pharmaceutical Society have each their helpful parts to play, but it is you, the individual pharmacist, who must supply

the driving thought and force.

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Fascinating and Illuminating

Nobody could have attended many meetings of the British Pharmaceutical Conference without becoming fully aware that spray-drying and enzyme action were subjects in which Dr. Bullock was acutely interested. If there were any Conference members who thought that may be he was riding particular hobby-horses too hard to be accepted as having a broad and balanced outlook on the problems and needs of pharmaceutical research, they have more than had their answer in the erudite and philosophical address which Dr. Bullock has given (p. 246) in his capacity as chairman of the Dublin 1956 meeting.

Dr. Bullock was no doubt conscious, when preparing his address, that there might be some who did not see the immediate appositeness to pharmacy of some of his studies for in the course of his address he confessed that "It was fortunate for me that pharmacists are interested in the sterilisation of . . . powders and oils, so that it was possible to work in such a way that the results might be useful as well as being of academic Fortunate it is for pharmacy that Dr. Bullock held tenaciously certain basic ideas of a philosophical kind which he has pursued until they have opened up new horizons. His researches have so large an element of the academic that a less imaginative and purposeful worker might have abandoned them for something more immediately practical. address it is to be seen that practical results and illuminating concepts are both amply present.

Dr. Bullock confesses that he has always been "fascinated by the fact that, if one of several of the properties of water had been only slightly different, life as we know it would have been impossible." From a speculation of the relationship of water to life he was led to a study of water as a catalyst of chemical reactions.

The catalysts in certain biochemical reactions that have proved impossible to reproduce in the laboratory without high temperatures and powerful reagents have been the organic catalysts known as enzymes. Therefore his studies had to take in enzymes. Enzymes known to be essential to life are inhibited by substances used as disinfectants. That brings in bacteriology. It was the idea that toxic dyes might be found which would kill invading bacteria that sparked-off the whole modern development of chemotherapy, which has led back to enzymology through a recent hypothesis that sulphonamide bacteriostasis may be the result of enzyme inhi-

bition. Both enzymology and bacteriology are involved in Dr. Bullock's work on what happens when microorganisms needing water in order to function are deprived of it. Theoretically they should perish, but Dr. Bullock with his spray-drying and freeze-drying investigations has further demonstrated a fact that was already known, namely that while the organisms themselves die their spores may survive to cause renewed bacterial activity when moisture is restored. Life is terminated in the spores when they are crushed to finest powder, and that suggests that what distinguishes from inert matter resides in a spatial "architecture" of their cells. One probability is that life is only possible when enzymes act in a given order, and that the order of action is ensured by the particular location of each enzyme within the cellular structure.

Dr. Bullock leaves his hearers with a picture of varied researches, carried out in what have come to be regarded as different branches of science, but which are in reality closely interrelated and throw light upon each other. His address has such richness of example and reference that it is impossible (and almost an impertinence to try) to do justice to his arguments in this short summary. The account of his address we give on p. 246 is not quite its full text, but further shortening would have dealt harshly with the sweep and vision of his remarks. The address should be read by everyone who claims an interest in the pharmaceutical sciences—or, indeed, in any aspect of science that has to do with life itself.

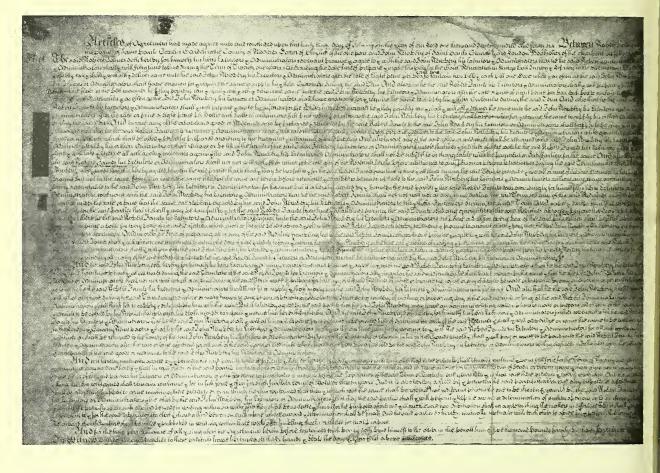
Like Dr. Bullock, those who read his address may not think that all the answers to all the problems are provided by enzymology, cytology or biochemistry. All will agree with his general conclusions (a) that "we are at the beginning of investigations into the relation between structure and the vital processes of cells and cell-parts which will prove to be most fascinating and illuminating" and (b) that "there is a great future for fundamental researches concerning the biochemical aspects of the pharmaceutical sciences.

A Photographic Textbook

The series of articles entitled "A Modern Course of Photographic Studies" that ran in The Chemist and Druggist from November 1953 to December 1955 was in the nature of a correspondence course in photography. The reader who studied the instalments as they appeared must have found when the course ended, the need for a textbook with which, periodically, to refurbish the knowledge he had gained. That textbook has now been published in the form of the series of articles collected in a 51-p. booklet (price 7s, 6d, or 7s, 9d., post free, from the Publisher of the C. & D.).

The book will be appreciated not only by "former students" of the course but by many of those who were perhaps unconcerned with the subject when the articles were first published, by those to whom a piecemeal presentation was not acceptable, and particularly by all photographic assistants who intend taking the examination of the Photographic Dealers' Association. The new book is, in fact, a worthy successor to the original C. & D. "Course of Photographic Studies" which served for many years as a textbook for that examination.

As its name implies, "A Modern Course of Photographic Studies" fits the requirements of an up-to-date examination syllabus.



An agreement that established a "dynasty"

THE GENERATIONS OF NEWBERY FAMILY IN PROPRIETARY MEDICINE TRADE

EST the name Newbery should become, like others once famous in drug-trade history, a matter of memory, it may be timely to put on record some of the many associations a "dynasty" has had with the sale of medicines in Great Britain, linking the year 1746 with

the present time.

The tale is one that has more than once been partly told. It is a remarkable and hardly credible fact that a three-page article on "The Messrs, Newbery" in THE CHEMIST AND DRUGGIST of April 1874 was already outlining the history of a House whose history extended over three or four generations, and that its author should have been commenting: "Figures would seem to show that it is easier to kill a business than to start one.'

A Notable Contract

The event that first brought the family into such close association with the trade may have been the signing in 1746 of an agreement, a portion of which is reproduced above. That is, from its wording, a contract between Dr. Robert James and Mr. John Newbery whereby the latter

became part proprietor of James's fever powder, that renowned proprietary about which so much has been written. Mr. Newbery, a writer and publisher, would appear to have been already for four years agent for another proprietary medicine: Hooper's pills (Dr. John Hooper of Reading). Sidelines of that sort, incongruous though they may seem today, were not uncommon among the literati of those days. The success that Mr. Newbery encountered from his transactions in James's powder caused Mr. John Newbery, according to the firm's records, gradually to abandon his book-trade interests. In 1761 he acquired a half-share in another proprietary: Bateman's pectoral drops. That remedy (perhaps on a lower level of fame than James's powder) nevertheless had also a profound effect on the family fortunes, as will soon appear.

Any such arrangement that may have existed between Dr. James and John Newbery must have been as satisfactory to the seller as to the buyer, because James in 1774, without any doubt, entered into an agreement with Newbery's son Francis for the outright purchase of the selling rights in another exclusive product: Dr. James's analeptic







Arthur Le Blanc Newbery FOURTH GENERATION



Lionel Newbery
FOURTH GENERATION



Francis R. L. Newbery

pills. Francis, who after his father's death had reached the decision—by Dr. Samuel Johnson's advice—to abandon a medical career in order to devote himself to the business, was at that time thinking of marriage. The wife of his choice was Miss Mary Raikes, a sister of the Robert Raikes who had earlier sold the Bateman proprietary to Francis's father.

A "Veritable Gold Mine"

The acceptance of the offer made to him by Dr. James proved, in the words of a member of the family, "a veritable gold mine to Francis Newbery, as he, shortly after accepting the same, was enabled to marry Miss Mary Raikes." The point of the remark is that one of the lady's brothers, Thomas, was the Governor of the Bank of England, and his son, the Right Honourable Henry Cecil Raikes, M.P., was the Postmaster General. After the wedding there was a house-warming at the business premises of the bridegroom in St. Paul's Churchyard. (Dr. Johnson was one of the guests), but the Raikes family insisted that he should provide another home for Mary. Newbery accordingly acquired from Lord Heathfield (Governor of Gibraltar), Heathfield Park, Sussex, of which county he was later appointed High Sheriff.



Above: The legend "Articles of agreement between Doctor James and Mr. (Francis I.) Newbery" appears on an outside sixth of a parchment measuring 25 in. by 33\frac{3}{2} in. The date is 1774. The original agreement of 1746 between Dr. James and John Newbery, father of Francis, is shown above the title to the article.

Third Generation

Francis Newbery lived to be seventy-five. He was succeeded by his eldest son John, a Colonel in the Sussex militia, but John had little liking for business, and somewhat neglected the family concern. Notwithstanding his lack of concern for its welfare, the business survived by virtue of the absence of severe competition, and when, in due course,

the Colonel's sons came into the business, they developed it in a "spirited and intelligent manner." The two brothers, Messrs. A. Le Blanc and Lionel Newbery, married on the same day two sisters, daughters of Mr. John White of Aylesbury.

Both brothers afterwards, travelled widely, doing much to open up trade relations between Britain and other countries. While the elder son visited Australia and India, the younger, Lionel, made several journeys to the United States and Canada, bringing back with him a number of agencies for American medicinal proprietaries, including those of Wm. R. Warner & Co., wholesale chemists, Philadelphia. When in the late nineteenth century Messrs. S. M. Burroughs and Henry S. Wellcome of Burroughs Wellcome & Co. started the merchandising on behalf of the Potter Drug & Chemical Corporation of Cuticura soap, they first sought the advice—at the suggestion of friends in the United States of Lionel Newbery on proprietary medicine laws in England. The Potter Co. were so pleased, so the story goes, with the advice given to their representatives that they wrote to say that if at any time they changed their representatives they would certainly give it to Messrs. Newbery & Sons. Eventually that change was made for Burroughs Wellcome & Co. purchased from Messrs. Newbery, the patent rights in the Brockedon process. That led in turn to the registration, in 1884, of the trade mark Tabloid, And Messrs, Burroughs Wellcome, becoming fully occupied with the making of Tabloids, relinquished the agency for Cuticura, which went to Messrs. Newbery & Sons.

Limited Company Formed

In the early days of the present century the partnership was converted into a private limited company. One of those who were inscribed as directors was another Francis, Francis Newbery II, now aged eighty-six and active in the family business until comparatively recent years. Francis became chairman of the company in 1910. He followed in his father's footsteps in visiting the United States, and in securing agencies for new and popular American products, including Palmolive soap, Tiz, Danderine, Vick vapour rub, etc. He also acquired in America the Valentine company's agency for the Australian-made Wampole pharmaceutical preparations.

As Francis Newbery & Sons, Ltd., "Wholesale chemists, druggists, sundriesmen, dealers in proprietary articles," the business operated, from its headquarters in Charterhouse Street, London, E.C.1, branches in Cardiff and Liverpool. Its standing and reputation in the trade stood exceptionally high over many years of the present century. Unfortunately for the continuance of the family tradition into a new generation the present Mr. Francis Newbery has no successor. While the business was in a flourishing condition, the directors decided that it would be well to dispose of it, and Mr. Francis retired at that time. The name was continued in the style adopted for the new company: Newbery & Phillips, Ltd., London, W.C.1.

A History of Pharmacy at Bristol Royal Infirmary: 4

FROM "DISPENSER" TO CHIEF PHARMACIST

By Laurence Dopson

N 1816 William Swayne the Apothecary applied for and secured the appointment of dispenser at Bristol Royal Infirmary, the work of the shop being too heavy for the three apprentices. Apparently a William Cross had been the first to hold that office. The appointment rested chiefly with the apothecary, and the dispenser was allowed to have breakfast and dinner at the Infirmary. His pay was £52 10s.

per annum. Here was the first germ of the modern separation of the medical and pharmaceutical appointments into their respective specialities. But after a time the arrangement lapsed, and the apothecary and his assistants again managed to cope with the making up of medicines on their own.

The apothecary, however, was becoming more and more of a doctor and less and less of a druggist. In 1833, as has been seen, his title at the Infirmary

was altered to that of House Surgeon and Apothecary. A proposal was made in 1842 to appoint a dispenser whose duties should be confined to the dispensary (as the apothecary's shop had come to be usually called). The proposal was rejected, mainly through the opposition of Mr. Richard Smith. In 1843, however, the offices of house surgeon and apothecary were separated, the new apothecary being in charge of the drug department. His duties included preparing a quarterly list of what was needed in the dispensary, ordering it, and seeing that the drugs and chemicals were good. In the absence of the house surgeon he was "in charge of the house." That side of his work gradually came to predominate. In 1851 the title of apothecary was dropped in favour of assistant house surgeon.

First Dispenser Appointed

At a medical faculty meeting on January 24, 1859, Mr. Augustin Pritchard proposed "that a Dispenser be appointed to relieve the Assistant House Surgeon of his duties in the Shop" (old terms die hard with the medical profession). The chief object was to give the assistant house surgeon time to help with the numerous out-patients. The hospital committee agreed, and on August 16, 1859, Joseph Monkman (dispenser at York County Hospital) was appointed. This first dispenser, in the modern sense, in charge of a department, started at a salary of £110 per annum, to be raised to £120 at the end of a year if the committee were satisfied.

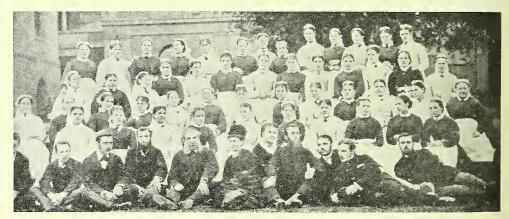
His staff and their salaries are as follows:

John Jones, first assistant......£40 and £18 for board Alfred Jones, second assistant....£18 do. Frederick Jeffery, first boy....£10 8s. do. Charles Broad, second boy....£3 18s. do.

In addition to the two Dispensary boys, there were, in 1861, three "messengers," two at an annual salary of £7 16s.

and one at £3 18s. Their duties included finding the house surgeon and attending to the lift.

The next dispenser mentioned in the History of Bristol Royal Infirmary was Mr. Dixon. He was succeeded as "chief dispenser" by Mr. Frederick J. Kilner, who had previously been working in the dispensary. A group photograph taken the year after his appointment as chief dis-



A group of Infirmary officials in 1879, Mr. F. J. Kilner, Dispenser, is fourth from left in front row.

penser shows that, in 1879, he was a handsome man with kindly eyes, a black pointed beard and a clean-shaven upper lip. He was appointed on May 25, 1878, and resigned in the autumn of 1899, having served the Infirmary for twentyfive years. His successor was appointed on November 28, 1899. The young man arrived in Christmas week 1899. He stayed until 1946. Then he retired. He now lives in Edinburgh. Before he went to Bristol Mr. A. L. Taylor, F.P.S., had served a four-years' apprenticeship with the late Mr. H. E. Atkins, at Newport, Monmouthshire, qualifying in 1894. He obtained his Apothecaries' Hall certificate in 1895, and his "major" in 1896. He had been for six months in charge of the pharmacy at East Dulwich Poor Law Infirmary and before that had served for two years at St. Bartholomew's Hospital, London. But he knew what it was like behind the counter as well as in hospital. Apart from his apprenticeship, he had spent two years on the dispensing staff of T. & W. & W. Southall, Bull Street, Birmingham. [The pharmacy closed down only recently (see C. & D., July 7, p. 15)].

When he arrived at Bristol Royal Infirmary, he found a staff of one Apothecaries' Hall assistant, two apprentices, two laboratory men, and three girls to deliver medicines to the wards, put up stock, etc. Everything was bought—even stock mixtures in winchesters.

Mr. Taylor made an immediate start on the manufacture of stock mixtures and the more common galenicals, and on obtaining the necessary equipment for a pharmaceutical department. Soon his staff was joined by Mr. S. V. Roberts, Ph.C., who had served an apprenticeship with Mr. H. E. Matthews, Clifton, and came to the department after obtaining his Ph.C. at the "Square." "After this," recalls Mr. Taylor, "we never looked back, and were soon making the bulk of our galenicals." He also introduced the system of book-keeping which he had seen at "Barts."

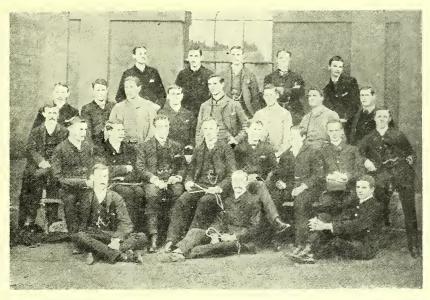
"At the time I went to Bristol," Mr. Taylor writes, "one of my duties was the examination of urines of patients for sugar, albumen, etc. A small but well-equipped laboratory for chemical work was one of the adjuncts of my department. A year or two after my arrival came my first chance of co-operation with the medical staff. Guy's Hospital, London, had been trying out the use of injections of gelatin in the treatment of aortic aneurism with somewhat disastrous results, and I was asked by the professor of medicine if I would undertake the preparation of similar injections. This I did, and saw the treatment of about a dozen patients, with some success. They were large injections-40-50 c.c. at a time into the buttocks. We had no trouble at all from the injections. This was the start of an intermittently continuous use of the pharmacy by the medical staff, which added much to the interest of one's work and tended to raise the status of the department.

"The systematic teaching of apprentices was also an integral part of my work, my practice being to give one lecture to them daily in pharmacy and forensic pharmacy. My predecessor had always prepared candidates for the Apothecaries' Hall dispenser's certificate, and I found it necessary to carry that on for a time, but increase of other work made me give it up as soon as possible.

As chief pharmacist I was responsible for courses of lectures to nurses in pharmacy and to the medical students in practical pharmacy. In connection with the latter I received an interesting communication from the Medical School suggesting that I should devote as much time as possible to teaching the students 'how to write a prescription,' which I found to be the most necessary and one of the most useful things I could teach them!" Mr. Taylor also, of course, became an examiner in pharmacy to the Pharmaceutical Society.

The decision to build a new surgical wing to the Infirmary in the 1900's added materially to the number of beds and to the work of the pharmacy. When the new wing was completed it was arranged under the Territorial Army system that it should constitute the 56th General Hospital in the event of war. Mr. Taylor joined it as Sergeant Pharmacist, and when war did come in 1914 he was commissioned as Quartermaster (even in those days the Army was not without an unconscious sense of grim humour). The Great War caused the only interruption of his service at the Infirmary. He went to Etaples, in France, when an overseas hospital was raised from Bristol and Birmingham General Hospitals under the command of Lieutenant-Colonel Paul Bush, senior surgeon at Bristol. "I met Sir William Glyn Jones, who came out on behalf of the Pharmaceutical Society to look into the conditions of pharmacy in the Army," says Mr. Taylor. "When the war was over I was commissioned jointly by the Pharmaceutical Society and the Army to inspect the military hospitals of Southern Command and report on the conditions and conduct of pharmacy. As a result of my report certain proposals were made by the Army, which, however, were not found to be acceptable by the Pharmaceutical Society."

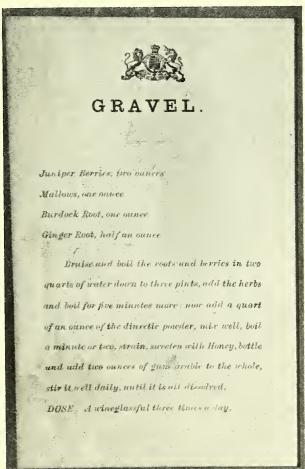
When Mr. Taylor left Bristol Royal Infirmary in 1946. after forty-seven years as chief pharmacist, he was succeeded by Mr. G. H. Darling, F.P.S. Mr. Darling entered hospital pharmacy after a short period in retail pharmacy. Previous to his Bristol appointment he had for ten years been chief pharmacist at Newcastle-on-Tyne General Hospital. In 1948 he became group chief pharmacist, United Bristol Hospitals.



A group of residents and students in 1886. Duties of the dispensary "messengers" included "finding the house surgeon."

Onward from Galen

EVIDENTLY, from its coat of arms, a sovereign remedy, the gravel mixture whose formula is reproduced here is one of



the exhibits at the Kirkstall Abbey museum, Leeds, an article on which appeared in these columns recently.

FORMULATION OF FLOOR POLISHES

Water-wax products potentially the best

By S. E. Moon, M.Sc., F.R.I.C. (chief chemist, Cimex-Fraser Tuson, Ltd.)

O the uninitiated a polish is merely a preparation which imparts to the treated area a lustre superior to that possessed by the original surface. In private households that limited function is substantially sufficient; traffic conditions are slight and the effort extended per unit area is invariably high. The maintenance supervisor, responsible for the appearance and cleanliness of large areas of industrial flooring must, however, make far wider demands upon his polishing medium. The following considerations must each receive attention:-

- 2. Ease of application and buffing
- 3. Cost
- 4. Labour requirements for subsequent maintenance
- 5. Non-slip factor
- 6. Harmful effect on flooring surface

If a polish is not available which can prove satisfactory under all those headings it is almost certain that large areas of industrial flooring will remain unpolished.

The possible combinations of wax and other commonly employed "shining" constituents are numerous, but while they possess a direct bearing on the quality of the product, such variations are not fundamentally important. Of far greater consequence, as it imposes a limitation on the application and character of the polish, is the nature of the solvent used to suspend or disperse the wax constituent. All commonly employed floor polishes may be divided into three main classes, dependent upon the nature of the solvent present, namely:-

- 1. Solvent Waxes: Those containing organic solvent (paraffin, white spirit, turpentine), but no water.
- 2. EMULSION WAXES: Those containing water (the wax is
- then present in emulsified form), but no solvent.
 CREAM WAXES: Those containing water and some solvent in emulsified form.

Solvent Waxes

When an organic solvent, normally white spirit, is poured into molten wax, the resultant liquid, when cool, forms a paste, the consistency of which is dependent upon the quality and hardness of the wax employed. The resulting products, containing from 8 to 12 per cent. of wax, are fluid at other than very low temperatures and are sold as "liquid" waxes; they have the advantage of being easy to spread. Paste wax products, almost synonymous with the housewife's "elbow grease," contain from 25 to 35 per cent of wax. Unfortunately it is never possible to produce a satisfactory solvent wax product from hard-wearing, high melting-point waxes. Generally speaking, wax forms a smooth paste in organic solvent only if the melting point is less than 50°C. above the average storage temperature. When high-quality vegetable waxes, with melting points in the region of 100°C. are dispersed in solvent, they crystallise out on cooling and a "seedy" product results.

TABLE I

| | | Carnauba | BEESWAX | PARAFFIN |
|---|-------|----------------------|---|-------------|
| Melting point Saponification value Hardness | | 90°C 84 | 62°C 95 | 52°C Nil |
| (ASTM penetration) | • • • | 1 | 15 | 8 |
| Form , | *** | Hard, pale yellow | Soft crystal- line, white or pale yel- low | consistency |

In Table 1 are listed the physical characteristics of three typical waxes: carnauba, an exceptionally high-quality vegetable wax, supreme in its gloss and wearing properties; beeswax, a medium melting-point, rather soft wax; and paraffin wax, a hydrocarbon or mineral wax of relatively low melting point.

If each of those materials was used independently as the sole wax constituent of a solvent polish, none of the resultant products would prove satisfactory. Carnauba wax would give a poor paste of no spreading power. Beeswax would form a paste of excellent consistency but of poor polishing power and virtually no wear property. The paste from the paraffin wax would be of poor consistency, only fair polishing power and bad wear property.

The skill of the polish manufacturer lies entirely in his ability to blend waxes of those various types to give a paste product possessing the polishing and wear properties inherent in carnauba wax or other high melting-point vegetable wax. Using those same three waxes, a goodquality solvent wax polish might be compounded according to the following formula:-

Carnauba wax 20 per cent. Beeswax 40 per cent. 40 per cent. Paraffin wax

Such a blend would yield a paste or liquid of good smooth consistency and could safely be sold as a highquality product.

Taking that product as typical of the solvent waxes, let us now assess its value to the floor waxer under each of the headings outlined at the beginning of this article:-

Gloss value: The polishing value of the blend would leave nothing to be desired.

Ease of application and buffing: In its liquid form solvent wax polish can be easily and economically spread, by either spraying or applying by a mop. The application of standard paste is arduous, dirty and uneconomical. Solvent wax polish to the formula given would buff readily either by hand or machine.

Cost: In either its paste or its liquid form, solvent wax consists predominantly of organic solvent, which has no fundamental value to the user since after application it merely evaporates into the atmosphere. At a conservative estimate at least half of the total cost of any solvent wax is due to the solvent content. It is sometimes claimed that the solvent has a value as a cleaning agent during polishing. In the writer's opinion, polish should be applied only to floors already clean, and the way to clean floors is to use detergent and water.

Labour requirements for subsequent maintenance: The melting-point of the wax in the typical composition given is approximately 70°C., which is as high as can be readily attained in a solvent wax. Although hard enough to polish well and withstand light traffic, it would not be sufficiently tough to stand up to heavy industrial wear for long periods. Fresh application of wax would be necessary at regular intervals, entailing considerable labour commitments. The relatively soft nature of the wax would also allow dirt to be trodden into and below the wax surface, with subsequent build up of unsightly spent wax accumulations, which are removed only with great difficulty and much labour.

Non-slip factor: Thin films of both carnauba and paraffin wax are extremely slippery. The addition of beeswax to the formula ensures that that hazard is considerably reduced. But unless each application of new polish is preceded by complete removal of all spent wax from the floor. the wax residue soon becomes dangerous. So far as the writer is aware there is no reliable way of imparting non-

slip properties to solvent wax polishes.

Harmful effect on floor surface: Waxes of all types act as protective media to any floor surface and represent no danger whatsoever to it. The organic solvents that are used to disperse such waxes are excessively active towards all organic materials; it is therefore not possible to employ solvent wax polish on rubber, asphalt or thermoplastic tiles.

Before leaving the question of solvent waxes it is necessary to draw attention to what appears to be an unenlightened trend among certain official bodies. Polish manufacturers are requested to quote for a so-called polish, composed of one part wax dispersed in ninety-nine parts white spirit. If such a product has any value it is certainly no greater than the polishing properties offered by 100 per cent, white spirit. One pound of wax in 10 gall, polish can leave no film of practical or protective effect whatso-ever. As 99 per cent, of such a product achieves no purpose other than to pollute the atmosphere in the locations polished, it would appear a costly way of achieving that dubious effect.

Recently, the introduction of various synthetic waxes has given the wax blender greater scope in the production of hard wearing polish incorporating organic solvent as a dispersing agent. None of those advances, however, overcomes the objection to solvent wax polish, regarding its lack of non-slip character and harmful effect on floor surfaces. Several of the synthetic waxes now available, which are, in the main, various forms of oxidised montan wax, combine high melting point with good solvent retention and this allows solvent base polish to be produced with wear properties not previously obtainable. Unfortunately those synthetic products would appear to be too costly to allow their incorporation in commercial products.

Low melting point polythene base waxes have recently been made available and such products when blended with conventional wax will give a liquid product in white spirit or other organic solvent of exceptional free flowing character. Utilisation of that product enables the manufacturer to produce a solvent wax containing 10 per cent, solids, which will remain liquid at temperatures within 5°C, of

freezing point for indefinite periods.

Emulsion Waxes

Basically, emulsion waxes consist of a dispersion, by means of an emulsifying agent, of submicroscopic wax parparticles in water. An outstandingly good polishing liquid eould be prepared as follows:—

Carnauba wax 11 per cent. Emulsifying agent 1 per cent. Water 88 per cent.

That typical formula will now, like solvent wax, be considered under each of the "property" headings.

Gloss value: The product possesses the unrivalled gloss properties of carnauba wax. It would be hard to improve

Ease of application and buffing: As the polish prepared from that formulation possesses the fluidity of water, it can be applied with mop, clean cloth or patent wax applicator. After allowing time to dry the film would "buff" with negligible effort.

Cost: The price of a polish of the composition would not be low, but its nature ensures the minimum waste with the maximum of spreading power. In addition, the whole of the manufacturer's raw material cost is recoverable by

the user as the final protective wax film.

Labour requirements for subsequent maintenance: The melting point of the wax in that composition is 90°C., and the hardness under standard methods of test, fifteen times that of beeswax and eight times that of paraffin wax. It retains, however, its waxy nature, and is capable of surface distortion under suitable friction.

The maintenance of floors regularly polished with such an emulsion—and all emulsion products should possess similar characteristics—is economical in labour requirements. The wax film is sufficiently hard to prevent the intrusion of surface dirt or other soils, and will "walk off" only slowly under the most extreme traffic conditions. The aim should always be the complete removal, by normal wear, before the addition of fresh wax. When the surface has become impaired with traffic soils it is only necessary to burnish with wire wool or mechanical means, using steel wire brushes. Spent wax and dirt is then removed as an easily collected powder, and the process is repeated until loss of lustre indicates that a fresh application of polish is required. Washing is necessary only at infrequent intervals. Only hard-wax emulsion-polishes containing no shellac or other resinous body are suitable for cleaning by the burnishing technique.

Non-slip Product

Non-slip factor: The typical formula for emulsion polish does not yield a film possessing non-slip characteristics, and various suggestions have been made for correcting that shortcoming. One of the most commonly encountered recommendations is to add paraffin wax to the blend, thereby softening the carnauba wax to varying degrees. That never yields a satisfactory non-slip product, and only takes from the carnauba wax most of the desirable properties which led to its use in the first instance.

A 100 per cent. non-slip product can, however, be obtained by the incorporation of small quantities of natural s lica in semi-colloidal form; a slight reduction in the hardness of the wax constituent is necessary, that being best obtained by the partial use of semi-hard vegetable wax such as candelilla. Such a polish gives a wax film only slightly softer than carnauba wax and of melting point not less than 80°C.

That a satisfactory, truly non-slip polish can be produced is amply confirmed when it is realised that on most passenger ships, where polished floors were not long ago avoided as the plague, floors are to-day maintained in a highly polished condition with complete safety to passengers and crew.

Harmful effect on floor surface: It has already been stated that wax has no harmful effect on any floor, and as emulsion polishes are merely wax in water, it follows that such products can be used with absolute safety on all types of floors. Were emulsion polish not available, the regular polishing of rubber, asphalt and thermoplastic tile would be impossible.

Cream waxes: Cream waxes may be considered as mixtures of the two preceding types. They inevitably possess the disadvantage of solvent waxes, though possibly to a lesser extent, and it is difficult to see what point there is in compounding such products, except as a means of cheapening a solvent wax polish.

In view of the fact that emulsion wax polish is of relatively recent introduction, it is not surprising that continual reports of improved formulation, method of production and quality of finished product are received. Many of those so-called advances are mainly concerned with methods whereby lower priced, and invariably poorer quality, waxes can be emulsified to yield stable liquids. It is unfortunate, from the emulsion-wax manufacturer's point of view, that only the more expensive, saponifiable waxes can be used if stable emulsions resistant to extreme changes of temperature are to be obtained. Furthermore, the writer's experience suggests that there is no reliable way of avoiding the use of the most expensive carnauba wax if a best quality product is desired. Nevertheless some recent developments are worth serious consideration.

The incorporation of silicones in furniture and motor car polish is now well established and their value as ingredients for floor-polish must inevitably receive some consideration. Unfortunately most of the silicone oil now available is

dispersed in organic solvent which would be harmful in its effect on certain types of floorings. A silicone-containing emulsion polish would be similar in its general effect to the cream-type waxes. Silicone may, however, be of limited value where special characteristics, such as freedom from water-staining, etc., are desired, but their use would for the moment be restricted to certain types of floorings. It should be noted that that use of silicone should not be confused with the previously suggested use of silica to impart nonslip character. Recent developments in the plastics field has resulted in the production of polyvinyl acetate emulsion, which on drying yields a plastic film of satisfactory transparent character. Such emulsions, either with or without addition of wax, have recently been recommended as dressings for vinyl floors where wax emulsions of the conventional type do tend to reduce the gloss value of the natural product. For similar reasons their use has also been recommended on wood floors which have been treated with phenolic resin type sealing compounds. Although that development is well worth further investigation, at the present time methods of plasticising PVA resins is insufficiently advanced to ensure even films which will not craze during their required life. That difficulty is greatly accentuated by the

fact that it is virtually impossible to remove residual PVA prior to reapplication.

TABULAR SUMMARY

| | SOLVENT WAX | EMULSION POLISH | CREAM POLISH |
|------------------------------------|-----------------|--------------------|-----------------|
| Gloss value Ease of application | Good Liquid— | Good Good | Good Fair |
| and or application | good | Good | Tan |
| | Paste-poor | | |
| Cost | Medium | Low | Medium |
| Labour requirements | Heavy | Low | Fair |
| Non-slip factor | Роог | Good | Good |
| Harmful effect on flooring | Very | None | Marked on |
| | marked on | | certain |
| | certain | | floorings |
| | floorings | | |
| | | | |

From the above conclusions it would appear that only from an emulsion product can one expect to obtain all the desirable properties of the ideal polish. In the United States that is already fully appreciated and sales of waterwax products, as they are termed, are completely overshadowing those of the conventional paste products.

A Chartered Accountant gives answers to ANY BUSINESS QUESTIONS?

I have recently completed my annual stocktaking, the stock being noted in three main divisions, i.e., that taken at net cost, then the two sections 30 per cent, tax and 90 per cent. tax. Last year I did that, deducting from the latter two figures percentages which I considered represented the year's profits and leaving the value of the stock including purchase tax. The amount allowed caused a little questioning and so I wonder if you could tell me the percentages which are generally accepted to represent the year's profit on goods carrying respectively 90 per cent, and 30 per cent, purchase tax.

STRICTLY, there is no generally accepted percentage of profit

STRICTLY, there is no generally accepted percentage of profit to be deducted from stock listed at selling prices as indicated in the question. The Inland Revenue is in principle concerned that stock-in-trade should be valued at historical cost, that is, the actual cost incurred of the particular items in stock, although the method of arriving at that figure may differ in one case from another. It is usual, therefore, for stock to be priced at cost (or market-value if that is lower), purchase-tax being an integral part of cost. If a local Inspector of Taxes is satisfied, however, that it is not possible to ascertain the true historical cost, he may allow a deduction for profit on the basis of his general knowledge of the trade, local and specific conditions, and having regard to the particular accounts of the trader before him. With some large stores, stock may be so valued, and in some isolated instances there may be circumstances obtaining in which the Inspector may be prepared to follow such method. A consistent basis of valuation, however, is of importance, and the Tax Inspector will in all probability agree a similar procedure in the accounts for the year now to be submitted.

I was interested to read in "Any Business Questions" recently, an inquiry, presenting a problem with which my husband and I will shortly be faced. In our case my husband does not pay tax at the full rate of 8s, 6d, in the £, while I do. We are about to take up a mortgage on a house and as you pointed out in the above-mentioned letter, income tax relief will only be granted at my husband's rate of tax. Am I right in thinking that a husband and wife may declare their combined incomes to the tax authorities, thus, in our case, getting tax relief at the full rate?

INCOME of a wife is deemed under taxation law to be that of her husband and mortgage interest is a reduction from total income, that is, the combined statutory income of husband and wife, thus reducing tax liability. A married woman, of course, suffers P.A.Y.E. tax on her employment income but that is technically not a separate assessment but a

deduction of tax at the source. If claim to separate assessments were made, other income of the wife would be assessed on her direct. But it should be noted that the total tax liability would remain the same, allowances and reliefs being apportioned between them. In my view, relief should be given at the highest rate payable by either wife or husband, in this instance at the full rate of 8s. 6d, in the £. Since total income is reduced, however, it must be borne in mind that earned income relief is also reduced by two-ninths of the mortgage interest payable.

When I accepted my present employment as superintendent pharmacist for a Co-operative Society, the terms of my engagement included the payment to me of any National Health Service rota fees. Since then, those have been paid to me as received, and have not been counted as part of my wages for income tax purposes. The managing secretary has now raised the question of whether those can count as an expense payment or whether they should be subject to the usual pay-as-you-earn income tax deductions. I should be glad if you could assist me by kindly letting me know what view the income tax authorities take of those payments, and what the exact position is. As I have always understood that rota payments were an ex gratia payment I have not included them as income on my tax return form. Should I have done so?

on my tax return form. Should I have done so?

Ex gratia payments made to an employee as employee are emoluments accruing to him in the course of his office or employment and as such assessable on him. They are subject to the usual pay-as-you-earn deductions, There would appear to be no grounds in the circumstances stated that such payments should count as expense payments. Total earnings, including rota fees under the National Health Service, should therefore correctly be included as income in income tax returns to be completed by the person in question.

A PHARMACIST'S ANTHOLOGY

SIMPLY A MATTER OF GERMS

From The Man in Asbestos, by Stephen Leacock.

"In one sense there's been no death for centuries past; we cut that out. Disease and death were simply a matter of germs. We found them one by one. I think that even in your day you had found one or two of the easier, the bigger ones?" I nodded. "Yes, you had found diphtheria and typhoid, and, if I am right, there were some outstanding like scarlet fever and small pox, that you called ultramicroscopic, and which you were still hunting for."

This free recipe book

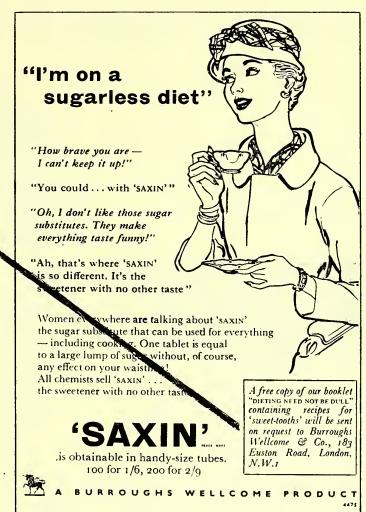


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WOMAN'S ILLUSTRATED
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'SAXIN'



'SAXIN' is now firmly established as the substitute for sugar. Women everywhere are buying "the sweetener with no other taste" as the simple and sensible way to reduce waistline worries.

Are you satisfied with the amount of 'SAXIN' you are selling? Our free recipe book for readers of leading women's magazines is certain to result in a big increase in 'SAXIN' sales. Be ready to get your share of these extra sales by ordering your supplies now. A new showcard is available on request.





'Savlon' Liquid is gaining wide acceptance as a home antiseptic, and it will inevitably continue to find more and more users. Containing two of the most powerful and safest of modern antiseptics—'Hibitane' and 'Cetavlon'—'Savlon' cleans and disinfects at one and the same time. Its unparalleled activity against bacteria, together with its safety and pleasantness in use, will assure the future of this new home antiseptic.

Large advertisements will appear in these national newspapers and magazines during September. October and November. Showcards and window display material are available on request.

THE RADIO TIMES

AR REBELS DE CONTROL VARDE

Retail price 2/9d. (inc. tax)



Savlon

LIQUID

ANTISEPTIC

PRODUCT

IMPERIAL CHEMICAL
(PHARMACEUTICALS) LIMITED
FULSHAW HALL . WILMSLOW . CHESHIRE



A subsidiary company of Imperio Chemical Industries Limited

Ph.667/1

TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, SEPTEMBER 5: The most important feature of the week was provided by GLYCERIN, the domestic price of which was reduced by £47 10s. per on on September 3. During the past few weeks refined glycerin has susained price cuts also in the United States through over production. British nanufacturers attribute the present reduction to lower raw material costs.

The market was quiet in PHARMACEU-CICAL CHEMICALS after the spate of price changes mentioned in last week's eport. The lull is believed to be only emporary and further price changes

re expected shortly.

Trading in CRUDE DRUGS was also uiet but prices continued to be firm.

More business was done in BUCHU
eaves and it is doubtful whether any
urther business can be done under s, 3d, per lb. Ergor continued around s. per lb., c.i.f., for Portuguese naterial; there were small lots of Polish nd Hungarian offering on the spot. GUM ACACIA was slightly easier at 141s. er cwt. Grade one East African PAPAIN remained short on the spot and olders were asking 2s. per lb. more han the previous week for small lots. part the previous week for small lots.

Frazilian MENTHOL was also slightly earer. Among Waxes, prime yellow CARNAUBA continued to be marked up.

CINNAMON quills were fourpence per b. dearer for shipment, elsewhere mong Spices there were little or no hanges to report with the execution of hanges to report with the exception of EPPER.

Among ESSENTIAL OILS, EPPERMINT was quoted at 30s. per lb. on the spot against 31s, previously. CITRONELLA was firmer, the Formosan being threepence per lb. dearer for hipment. PATCHOULI was 3s, per lb. ower on the spot.

Pharmaceutical Chemicals

ANEURINE HYDROCHLORIDE. — Price per cilo is £22 5s. with 10-kilo lots at 22 2s. 6d, per kilo.

AMMONIUM CHLORIDE, B.P. - Makers uote 1-cwt, lots at 68s.

ASCORBIC ACID.—Rates (per kilo) are:—kilo, £5 7s.; 10 kilos, £5 4s.

ATROPINE. — Rates (per oz.) for 16-oz. ots are: Alkaloid, 23s. 6d.; Sulphate, 9s. 6d.; Methonitrate, 26s. 6d. Methyl-Romide, 25s. 6d. Quotations for 1-oz. ots are 1s. 6d. above those rates.

BARBITONE.—Rates per lb. for 1-cwt. lots 24s. per lb. The sodium derivative is 4s. 6d. per lb.

BENTONITE.—Offers of B.P. material are bout £70 per ton as to quantity.

BENZOIC ACID.—1-cwt. lots are 2s. 11½d. er lb. The SODIUM SALT is 2s. 9½d. per p. in 1-cwt. lots.

BRUCINE.—ALKALOID is from 1s. 2d. to

s, 6d, per oz, and NITRATE and SULPHATE om 1s, 1d, to 1s, 5d, per oz, (100-oz, nd 25-oz, respectively).

BUTOBARBITONE.—B.P.C. is 70s. per lb.

Calamine.—1-cwt. lots are 1s. $10\frac{1}{2}$ d. per .; 10-cwt., 1s. 9d.

CALCIFEROL.—B.P. is 3s. 11d. per gm. 100-gm. lots and 3s. 9d. per gm. for 50-gm.

CALCIUM CARBONATE. — B.P. light-pre-pitated powder is £29 per ton, ex store.

CALCIUM CHLORIDE. — B.P. crystals are $3\frac{1}{2}d$., and granulated, $10\frac{1}{2}d$. per lb. in cwt. lots.

Calcium gluconate. — Quantities of 3-cwt, and upwards are quoted at 3s. 9d. per lb.; 1-cwt. to 2-cwt., 3s. 10d.

ALCIUM PANTOTHENATE.—Price per kilo is £22 17s, 6d.

CHLORAL HYDRATE. — In 1-cwt. lots the price is about 3s, 10d. per lb. as to holder.

CHLORBUTOL.—28-lb. lots are at the rate of 10s, per lb.

CHLOROCRESOL.—Pharmaceutical quality is quoted at 7s. 2d. per lb. for 1-cwt. lots.

Chloroform.—1-ewt. lots in winchesters are 3s. 6d. per lb.; 56-lb., 3s. $6\frac{1}{2}$ d. In drums, prices are 3s. 4d. and 3s. $4\frac{1}{2}$ d.

COCAINE.—For 16-oz. lots the price of the HYDROCHLORIDE is 91s, 6d. per oz. and ALKALOID, 101s. Subject to D.D.A. regula-

CYANOCOBALAMIN. — Less than 10 gm. lots are £87 10s. per gm.

CYCLOBARBITONE. — B.P.C. and CALCIUM derivatives in 1-cwt. lots are 62s. 6d. per

DICOPHANE (DDT).—Prices are as follows:—1-cwt. lots, 3s. 2d. per lb.; 1-ton, 2s. 11d.

DIPHENAN.—Prices range from 55s. 3d. (56-lb.) to 63s. (1-lb.) per lb.

7-DEHYDROCHOLESTEROL, ACTIVATED. — Price is 4d. per million units for less than 1,000 m.u. and 3½d. for 1,000 to 5,000 m.u.

FOLIC ACID.—B.P. and U.S.P. is offered at 5s. per gm, in 1-kilo lots.

GLYCERIN.—Rates for pharmaceutically pure are easier from September 3 as follows:—

| Annual purchases or spot lots of | Under 1-cwt. | l-cwt. and and under 5-cwt. 1-ton | | 1 ton and under 5 tons | 5 tons and under 25 tons | |
|---|-----------------|-----------------------------------|-------|---------------------------------|-----------------------------------|--|
| Per cwt. | s. d. | s. d. | s. d. | s. d. | s. d. | |
| TINS | | | | , | i | |
| 14-lb. | 241 0 | 236 6 | 232 6 | 228 0 | 225 6 | |
| 28-Ib | 239 0 | 234 6 | 230 6 | 226 0 | 223 6 | |
| 56-Ib. | 235 0 | 230 6 | 226 0 | 222 0 | 219 6 | |
| DRUMS | | | | | | |
| 1-cwt. | - | 214 6 | 210 6 | 206 0 | 204 6 | |
| 2½-cwt. | _ | 211 6 | 208 0 | 203 6 | 202 0 | |
| 5-cwt. | | | 207 6 | 203 0 | 201 6 | |
| 10-cwt. | - | | 206 6 | 202 6 | 201 0 | |

For 25 tons and upwards the price is from 200s. to 225s. 6d. as to containers, Bulk deliveries in tank wagons from 197s. 6d. to 198s. 6d. Pale straw industrial glycerin, s.g. 1·260, is 5s. per cwt. less than the above.

GLYCEROPHOSPHATES.—Rates per lb. for 1-cwt. lots are as follows:—ACID, B.P.C., 20 per cent., 5s. 9d., CALCIUM, soluble B.P.C., 11s. 9d.; IRON, B.P.C., scale, 15s. 9d. and powder, 14s. 9d.; MANGANESE, soluble, B.P.C., 14s. 3d., and insoluble, 7s. 6d.; MANGANESE, B.P.C., 26s. 3d.; POTASSIUM, 50 per cent., B.P.C., 3s. 9d. and 75 per cent., B.P.C., 3s. 1d. and 75 per cent., B.P.C., 4s. 6d.

Guaiacols. — Liquid, B.P. is 16s. 3d. per lb. for 28-lb. lots; crystals, 16s. 9d.; carbonate, 18s. 3d.

HOMATROPINE.—Current rates (per oz.) for 16-oz, lots are now: Alkaloid, 28s. 6d.; Hydrobromide, 23s. 6d.; Hydrochloride, 27s. 6d.; Methylbromide, 24s. 6d. 1-oz, rates are 1s. 6d. per oz. above those rates above those rates.

HEXOBARBITONE.—In 1-cwt, lots the price is 50s, per lb.

is 50s, per lb.

Iron Salts. — Sulphate, B.P. crystals are 8½d. per lb. in 28-lb. lots; 1-cwt. is 51s. 3d. per cwt. and 5-cwt., 48s. 9d. per cwt. Granulated and pea crystals are 2s. 6d. per cwt. more; Sulphate, exsicated is 1s. 3d. per lb. for 28-lb., 1-cwt., 111s.; 5-cwt., 107s. per cwt., 1-cwt. fibre kegs free, other packages extra. Phosphate, Saccharated, B.P.C., 28-lb. lots are 3s. 6d. per lb. Oxide, Red Precupitated, B.P.C., 1-cwt., 1s. 11½d. per lb.; Carbonate, Saccharated, B.P.C., 28-lb., 3s.; 1-cwt., 2s. 8d. ammonium sulphate, 1 cwt., 1s. 6½d. per lb. 1-cwt., 2s. 8d. AM 1 cwt., 1s. $6\frac{1}{2}$ d. per lb.

ISOPRENALINE SULPHATE.—B.P. is 1s, 3d, per gm. for 1,000-gm, lots and 1s, 9d, per gm, for 100-gm, lots.

KAOLIN.—In 1-cwt. bags LIGHT is quoted at 60s. per cwt. and 1-ton lots at 57s. per

Mandelic acid.—In 1-cwt, lots the price is 12s, 6d, per lb, with the Calcium salt also 12s, 6d. Sodium mandelate is 13s, and ammonium mandelate 50 per cent. solution, 7s, 6d.

MENAPHTHONE. — B.P. is £12 pcr kilo; ACETOMENAPHTHONE, B.P., £12; WATER-SOL-UBLE (menadione sodium bisulphite, U.S.P.), £16 per kilo.

METHYL PHENOBARBITONE.—B.P. is 43s. per lb. in 1-cwt. lots.

NICOTINAMIDE. — Prices per kilo are now: 1 kilo, 92s. 6d.; 10 kilos, 90s.; 50 kilos, 88s. 6d.

NICOTINIC ACID. — Prices per kilo are 57s, 6d. for 1-kilo and 53s, 3d, for 50-kilo lots.

NIKETHAMIDE. — Prices per kilo are:— 1-kilo, 113s.; 50-kilos, 105s.

1-kilo, 113s.; 50-kilos, 105s.

OPIATES.—Home trade rates for 4-oz. up to 7-oz. lots including container (non-returnable) are as follows:—Codeine.—alkaloid, hydrobromide, iodide, 58s. 6d. per oz. (2,063s. per kilo); hydrochloridc, sulphate, 51s. 3d. (1,808s.); phosphate, 44s. 9d. (1,578s). DIAMORPHINE.—Alkaloid, 60s. 3d. per oz. (2,125s. per kilo); hydrochloride, 54s. 9d. (1,931s.) ETHYLMORPHINE.—Alkaloid, 63s. per oz. (2,222s. per kilo); hydrochloride, 53s. 9d. (1,89s.). MORPHINE.—Alkaloid, bimeconate, tartrate, 60s. 6d, per oz. (2,134s. per kilo); acetate, hydrochloride, sulphate, hydrobromide, 50s. 3d. (1,773s.), — Subject to D.D.A. Regulations,

PETHIDINE HYDROCHLORIDE.—B.P.

PETHIDINE HYDROCHLORIDE. — B.P. 100-gm. lots are now quoted at 100s, Subject to D.D.A. Regulations.

Phenobarbitone.—1-cwt. lots are 21s. 6d. per lb. and sodium, 22s. 6d.

Potassium 8-hydroxyquinoline sulphate.—1 kilo is 47s. 1d. and 50 kilos, 44s., per kilo.

PROCAINE HYDROCHLODIDE. — 1-cwt. lots are 30s. per lb.

Pyridoxine. — £145 10s, per kilo. - Manufacturers' rate is

£145 10s, per kilo.

QUININE.—Makers' nominal rates (per Oz.) for 100-oz. lots and over are:—
ALKALOID, 3s. 10d.; ACETYLSALICYLATE, 5s. 4d.; BISULPHITE and SULPHATE B.P. 1932. 2s. 8d.; SULPHATE, B.P. 1948, 3s.; DIHYDROBROMIDE and DIHYDROCHLORIDE, 3s. 10d.; FORMATE, 4s. 8d.; GLYCERO-PHOSPHATE, 4s. 5d.; PHOSPHATE, 4s. 4d.; HYDROBROMIDE and HYDROCHLORIDE, 3s. 5d.; SALICYLATE, 3s. 11d.; QUININE and UREA HYDROCHLORIDE, B.P.C., 4s.; TANNATE, 2s. 7d.

RESORCINOL, — 1-cwt, lots are now quoted at 13s. per lb, by manufacturer.

RIBOFLAVINE, — Price (per kilo) is £24 17s. 6d, for 1-kilo and £24 15s, for 10-kilo lots.

SACCHARIN.—In lots of 1 lb, and over B.P.C. powder is quoted at 99s, 10d, per lb, the SODIUM SALT is 80s, 10d, per lb, Prices include duty and carriage.

SALICYLAMIDE. - Price (per lb.) for 1-cwt. lots is 8s. 6d.

STILBOESTROL.—1-kilo lots of B.P. and DIPROPIONATE are 730s, per kilo.

STRYCHNINE. — Minimum rates per oz. (1,000-oz. lots) include: — ALKALOID, 5s. 6d.; HYDROCHLORIDE, 4s. 6d., SUL-PHATE, 4s. $8\frac{1}{2}$ d.

SULPHOCARBOLATES, — SODIUM PHENOL-SULPHONATE, B.P.C. (powder) is 5s. 6d. per lb. in 1-cwt. lots and ZINC, B.P.C., is 5s. 6d.

SULPHUR. — B.P. PRECIPITATED is from £110 to £120 per ton, as to quantity, delivered U.K.

TANNIC ACID. — The B.P. levis, ex ether is quoted at 4s. 9d. per lb. for 5-cwt. lots and 5s. per lb. for 1-cwt.

TERPIN HYDRATE. — Prices are from 5s. per lb. upwards as to quantity.

TERPINEOL. — Prices of B.P. grade are from 3s. to 3s. 6d. per lb., as to quantity.

THEOPHYLLINE.—1-cwt. lots of ALKALOID, ANHYDROUS, are quoted at 18s. 6d, per lb. and AMINOPHYLLINE at 22s. 6d.

UREA. — Manufacturers' rates for pharmaceutical grade are £63 per ton in 1-cwt. bags non-returnable. Technical quality is £44 10s. per ton.

VITAMIN A. — Synthetic. Supplied in strengths of 200,000 international units per gm. the price is 11¼d. per million i.u. Natural is 1s. 4d. per million units.

VITAMIN D. — In oil, 2 million units per gm. the price is 2d. per million international units. Crystalline see under calciferol. D₃ see under 7-dehydrocholesterol activated.

VITAMIN E (synthetic). — TOCOPHERYL ACETATE, B.P.C., 10 gm. to 100 gm., 1s, 2d. per gm.; 100 gm. to 1 kilo, 1s, per gm. 1 kilo and under 10 kilos, £47 5s. per kilo. The equivalent rates for racemic & TOCOPHEROL (unesterified) are 1s, 3d, per gm.; 1s, 1d, per gm. and £52 per kilo.

Crude Drugs

-Kobé No. 1 is from 13s, per lb., AGAR.duty paid; for shipment, 11s. 6d., c.i.f.

ANTIMONY. — English 99.6 per cent. is £222 10s.; 99 per cent., £210 per ton.

BALSAMS.—Quotations (per lb.) are:—Canada: 24s. on the spot. Copaiba, 7s, 9d. to 11s., duty paid. Peru, 10s., duty paid. Tolu (genuine as imported) is 27s. 6d. nominal; B.P. is 17s. 6d., spot.

BELLADONNA. — Leaves are 2s. 6d. per lb. on the spot and c.i.f. Root, 1s. 10d.

BENZOIN.—Sumatra block on the spot is from £25 to £30 per cwt. No. 1 for shipment is £23 5s., c.i.f. Almonds, 15s. per lb., c.i.f.

BUCHU.—Spot supplies are about 7s. 3d. per lb.

CRDAMOMS.—Aleppy greens for prompt shipment are 14s. 6d. per lb., c.i.f., with new-crop, September-October at 13s. 6d., c.i.f. Spot is 14s. 6d.

CASCARA SAGRADA.—American 1955 peel is from 275s, to 295s, per cwt., duty paid.

CASSIA BARK. — Whole on the spot is about 85s, per cwt., in bond and for forward delivery, 74s. 6d., c.i.f. Broken 75s., in bond, and 63s., c.i.f.

CHAMOMILE. -- Belgian flowers are 5s. 3d. per lb. on the spot.

CHILLIES. — Mombasa, spot 265s. per cwt., 255s., c.i.f.

CINNAMON.—Ceylon for shipment (c.i.f.) per lb., OOOO, 7s. 4½d.; OOO, 7s. 2½d.; OO, 7s. 0½d.; O. 6s. 10½d.; firsts, 6s, 3d.; quillings, 4s. 1½d.; chips, 10½d. to 11½d. Cochineal. — Black-brilliant is 27s. per lb. on the spot; grey-black, 17s. 6d.; silver-grey, 16s. 6d.

COLOCYNTH PULP. -- Spot offers are 4s. 6d. per 1b., duty paid.

DIGITALIS LEAF .- Purpurea is offered at 1s. 3d. per lb., c.i.f.

ERGOT. — Portuguese old-crop is per lb., c.i.f.. for prompt shipment; F European, 4s., spot, and Hungar European, Hungarian, 8s. 6d., spot.

GINGER.—African on the spot is 245s, per cwt., with September shipment at 230s., c.i.f. Jamaican No. 3, 600s. per cwt., spot; no shipment offers.

GUM ACACIA. — Kordofan cleaned sorts on the spot are 141s. per cwt.; afloat, 129s., c.i.f., and shipment, 126s., c.i.f.

HENNA. — Indian is now 72s. 6d. per cwt. g/n on the spot.

1PECACUANHA. — (Per lb.), Colombian, 43s, 6d., spot, and 41s., c.i.f. Matto Grosso, 42s. 6d., spot, and 40s., c.i.f. Nicaraguan, spot, unobtainable; shipment firm at 57s. 6d., c.i.f.

KOLA NUTS. — Jamaican are offered at about 8d, per lb., spot, and $6\frac{1}{2}$ d., c.i.f. African is $5\frac{1}{2}$ d. spot.

LIQUORICE. — Natural root: quotations include Anatolian 47s, 6d.; Russian, 50s.; Persian, 35s.; Chinese, 42s. 6d. per cwt. Block juice is 200s. per cwt. for the Anatolian and 185s, for Chinese and British on the spot. Italian stick from 310s. to 476s. per cwt., duty paid.

LOBELIA HERB. — Spot material is 11s. per lb. September shipment, 9s. 6d., c.i.f. Supplies of Russian

LYCOPODIUM. — Supplies of Russia triple-sifted are 7s. 3d. per lb. in bond. MACE. — Whole on the spot is 23s. per

MENTHOL. — Chinese, steady, 51s. per lb., duty paid. August-September shipment, 45s., c.i.f. Brazilian, spot, very short, 45s., duty paid.

MERCURY.—Per flask (76-lb,) £83 10s. on the spot.

Myrrh. — Selected sorts are unobtainable on the spot.

ORANGE PEEL. — West Indian bitter quarters are 11d. to 1s, per lb.; Spanish, 1s, 1d. to 1s, 3d.

27s. per lb. for grade 1.

Pepper.—White Sarawak is 2s. 6½d. per lb. on the spot, with shipment about 2s. 5\frac{1}{3}\ddots, \text{c.i.f.} Black Sarawak is offering on the spot at 1s. \$10\frac{1}{3}\dots\$, per lb.; September shipment, 1s. 9d., c.i.f. Black Malabar, 275s, per cst. on the spot; September shipment, 245s., c.i.f.

PEPPERMINT LEAVES. — Dutch for shipment are offered from 3s, 4d, to 4s, per

PIMENTO. — Spot is 590s. per cwt, with forward at 540s., f.o.b.

QUASSIA. — Chips are 42s, 6d. per cwt. on the spot.

QUILLAIA. — Spot offers of bark are about 205s. per cwt. with shipment, 185s.,

RHUBARB.--Quotations for Chinese are from 6s. 6d. to 10s. 6d. per lb., as to quality.

quality.

SEEDS.—(Per cwt.). ANISE.—Tunisian, 205s., in bond; Spanish, 245s., duty paid; Danubian, 180s., in bond. CARAWAY.—Dutch, 132s, 6d., duty paid, CELERY.—Indian is now quoted at 142s. 6d., spot. CORIANDER.—Small business passing. Spot. Moroccan, 90s., duty paid. Danubian or Rumanian, 62s. 6d., duty paid. Bulgarian smalls, 52s, 6d., duty paid. CUMIN.—Market quiet. Spot, Cyprian, 130s.; Moroccan, 135s., duty paid, and Iran, 117s, 6d., in bond. DILL.—Indian offered at 65s., spot. FENNEL. — Firmer on account of the forward price becoming dearer. Indian, 95s., spot. FENUGREEK.—Unchanged, sellers of Moroccan, 67s. 6d., duty paid. Indian, 68s, MUSTARD.—English, 65s. to 80s., according to quality.

SENEGA. — Spot is 18s. per lb. Shippers asking 18s. 6d. to 19s., c.i.f.

SENNA.—Tinnevelly LEAVES (per lb.):— Prime bold, 1s. 4½d.; prime No. 3, 8½d.; f.a.q., No. 3, 7½d. all on the spot; Pods, f.a.q., 7½d., c.i.f. Manufacturing, 7½d., spot. Alexandrian manufacturing pods, 10d.; hand-picked from 3s. 6d. to 7s., as to quality.

SHELLAC. — F.O.T.N., 320s. per cwt.; F.O. No. 1, 345s.; fine orange, 360s. to

SLIPPERY ELM. - Grinding quality bark is 2s. 6d. per lb.

SQUILL.—White is offered on the spot at 57s. to 62s. 6d.

STRAMONIUM. — Indian LEAVES are 70s. per cwt., and European 80s. on the spot. STROPHANTHUS. — Kombé on the spot is 6s. 9d. per lb. for the 100 per cent.; Gratus is 12s. Both nominal.

Tonquin Beans. — Para frosted are cleared on the spot but Trinidad are offered at 8s. per lb.

Tragacanth.—No. 1 ribbon is £170 to £175 per cwt.; No. 2, £140 to £145.

TURMERIC. — Madras finger on the spot is 90s, per cwt. with September-October shipment quoted at 77s. 6d., c.i.f.

VALERIAN ROOT.—Indian on the spot is 140s. per cwt. Dutch, 182s., c.i.f.

Vanillin.—Rates (per lb.) are now:-5-cwt. lots, 27s. 6d.; 1-cwt., 27s. 9d. 56-lb., 28s.; smaller quantities, 28s. 3d.

56-lb., 28s.; smaller quantities, 28s. 3d.

WAXES. — (Per cwt.). BEES' — Dar-es-Salaam, August-September shipment, 635s., c.i.f., spot, 625s.; Sudanese, 570s., duty paid, and 525s., c.i.f.; Abyssinian, spot. 570s., duty paid, shipment, 530s., c.i.f. Candelilla. — Shipment, 550s. per cwt., landed; spot is 550s. Carnauba.—Fatty grey, spot, 575s. per cwt.; for shipment, 565s., c.i.f. Prime yellow, spot, 1,320s.; for September-October shipment, 1,180s., c.i.f.

WITCH HAZEL LEAVES. — Spot supplies are 2s. 3d. per lb.; September shipment, 2s. 1d., c.i.f.

Essential and Expressed Oils

AMBER. - Rectified on the spot quoted at from 1s. 6d. per lb.

ALMOND.—B.P. imported oil is 10s. 6d. per lb.; British, 13s. to 13s. 6d. Angelica. — From seed, 285s. per lb.

ANISE.—Chinese, 14s. 6d. per lb., spot; 13s. $4\frac{1}{2}$ d., c.i.f.

BAY. — West Indian is 10s. 6d. per !b on the spot.

BERGAMOT. — Spot quotations are now

CARDAMOM. — Price per lb. is from 0s. for English-distilled and from 265s to 270s. for imported.

CINNAMON. — From quillings, English distilled is quoted at 30s, per oz. Othe B.P. oils available down to 90s, per lb Ceylon leaf, crude, 14s, 6d.; rectified 27s, 6d. per lb., spot.

CITRONELLA.—Ceylon, afloat 6s. 3d. pe lb.; shipment, 5s. 6d., c.i.f. Formosa fo shipment is from 5s. 9d. to 6s., as t

CLOVE.—Madagascar leaf is 8s. 10d. pe lb., duty paid and 7s. 6d., c.i.f., for shir ment. Rectified 87–88 per cent., 12s. distilled bud oil, English, from 35s.; in ported, 17s, 6d.

DILL. — B.P. English-distilled oil r quoted at 60s, per lb. Imported oils ar from 35s, per lb.

EUCALYPTUS.—Australian 70 to 75 pt cent. eucalyptol on the spot is 5s. 8d. pt lb.,; 80 to 85 per cent., 6s. 4d. Spanis 70 to 75 per cent. at 5s. 3d., duty paid Chinese type, 4s. 9d., duty paid.

FENNEL.—Spanish sweet on the spot quoted from 12s. per lb. with Russian i 18s. 6d.

GARLIC.—English is 55s. per oz., on the

spot.

GERANIUM.—Bourbon is from 92s. 6d. per lb. on the spot and Algerian, 77s. 6d. GINGER. — English-distilled oil is 205s. per lb. Imported oils are 165s, for Jamaican and 87s. 6d, for Chinese, duty paid. HYDNOCARPUS. — Spot is about 2s. 2d. per lb.

JUNIPER BERRY. — Czechoslovakian oil (B.P.C.), 15s, 6d, per lb, and Jugo-Slavian, 14s, on the spot. English-distilled is 155s. LEMON.—Prices of B.P. oil (4 per cent. citral) vary greatly on the spot according to quality and range between 25s. and 40s. per lb. Californian, 28s. 6d. to 36s. 4d., c.i.f., as to quality, subject to licence.

LEMONGRASS.—Spot is 11s. 9d. to 12s. per lb.; September-October shipment, 10s., c.i.f.

NUTMEG.—English-distilled is nominally 120s. per 1b.; imported. 52s. 6d.

ORANGE.—Spot quotations of sweet oil ORANGE.—Spot quotations of sweet oil include Floridan at 3s. 11d. per lb.; Californian, 5s, 6d.; West Indian, 7s. 6d.; South African, 7s. 6d. For shipment, proprietary brand Californian sweet is 6s, 14d., c.i.f., and cold-pressed, U.S.P., 9s. 4d., c.i.f. Terpeneless is 200s. per lb., spot, and bitter, 20s, per lb.

OTTO OF ROSE.—Bulgarian is 450s. and Turkish, 190s. per oz.

PATCHOULI. — Penang is 35s., duty paid, and 28s., c.i.f.

PEPPERMINT.—Arvensis: Chinese is 30s, per lb. on the spot and 28s., c.i.f. Brazilian, 23s. spot, and 21s. 6d., c.i.f. Formosan, 14s. 3d., c.i.f. Italian "Mitcham":type oil is 56s. to 60s. spot, as to make. American, 35s. to 39s.

PETITGRAIN.—Paraguay, spot, 24s. 6d. to 25s. 6d. per lb., as to brand.

PIMENTO, — English-distilled berry is 175s, per lb.; imported, 72s. 6d. Rectified leaf, 27s. 6d. per lb. for small lots.

ROSEMARY.—Spanish oil on the spot is from 5s, 6d, per lb., duty paid.

RUB. — Spot offers for small lots are

now 17s. 6d. per lb.

SAGE.—Spanish is offered at from 8s. per lb. and Dalmatian, 30s.

Sandalwood.—Mysore is 87s. 6d. per lb. on the spot and East Indian, 82s. 6d. SASSAFRAS.—Brazilian is 4s. 3d. per 1b. duty paid.

SPEARMINT. — Offers of U.S.P. oil are from 31s. to 31s. 6d. per lb. on the spot. TANGERINE. — Sicilian is from 38s. to 48s. per lb., on the spot.

THYME.—Spot is 8s. 6d. per lb. for the

UNITED STATES REPORT

New Yory, September 4: Trading was generally quiet, Fine Chemicals, with VITAMINS moving strongly. CRUDE Drugs were steady and little changed. LOBELIA HERB was firm on scarce supplies and increasing demand with new rop quantities reported low. Buchu temained firm since only limited quan-ities were available for shipment from he primary centre. Producers report hat the late Spanish frosts this year affected the yield of ROSEMARY OIL.

SSSENTIAL OILS were quiet and unhanged. Production of PEPPERMINT nd SPEARMINT are expected to set up new records this year according to the rop reporting board of the Department f Agriculture. This year's crop of pep-ermint is expected to yield 2,173,000 b. of oil (an increase of 12 per cent. ver last year) and spearmint 737,000 p. (25 per cent. up).

ZANZIBAR CLOVES

Supplies greater than estimates

THE market review of the Zanzibar Clove Growers' Association for the final quarter of the seasonal year 1955-56 shows that the year closed with a total crop of 885,225 frasilas (13,832 tons) against the estimate of 650,000 frasilas (10,157 tons). Supplies for the quarter under review totalled 56,679 frasilas (886 tons), of which 51,772 frasilas (809 tons) came from Pemba.

The course of the current crop is compared with the same period for the previous season in the table below:—

| | 1955–56 1b. | 1954–55 lb. |
|---|--|--|
| July August September October November December January February March April May June | 748,986 1,375,725 3,893,570 4,896,308 5,375,438 5,758,562 3,743,938 2,098,082 1,106,986 777,159 581,301 626,845 30,982,900 | 1,267,668 880,095 1,058,977 900,979 1,343,784 3,174,382 3,850,689 2,023,055 1,461,489 1,632,259 784,700 762,423 |
| | · | |

The Clove Growers' Association's buying and selling prices for the quarter remained unchanged. From October 1, the Association's selling prices per 100 lb., ex bulk, ex duty, to exporters only, usual contract, will be 260s, for grade one (against 250s, at present). Indonesia purchased 61 million lb. in the quarter or nearly 80 per cent. of the production, making a total for the year of 17.4 million lb. Clove stem oil totalling 29,380 lb. was shipped during the quarter, the United Kingdom taking 19,680 lb., and the United States of America, 9,600 lb.

WORLD TRADE

Disputed Property in U.S. - The United States Court of Appeals has rejected a new plea by the IG Chemie Holding Co., a Swiss concern, which is trying to recover property seized during the second world war. The Swiss com-pany had asked the Court of Appeals for a new hearing on a Lower Court order refusing IG Chemie more time to produce records for its case. The suit was dismissed on August 24 "with prejudice" under the order, meaning it could not be refiled.

Egypt's Chemical Industry. — The Egypt's Chemical Industry. — The Egyptian Minister of Industry has been examining steps for expanding the manufacture of drugs in Egypt. According to an official report Egypt's chemical industry is still in the development stage. Imports of chemical products amounted to E£4,250,000 a year, while drugs and medicines are estimated at E£8,500,000. The report said that the cultivation of medical herbs should be expanded and that the existing chemical factories should be encouraged to produce inorganic salts used in pharmaceutical products. It has also been recommended that research centres be set up, that the Government should extend greater facilities to the industry, and that Egyptian universities should contribute to the promotion of the industry.

TRADE MARKS

APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," August 22 For all goods (5)

WEINOTONINE, 748,724, by Zyma S.A., Nyon, Switzerland, BROLENE, 753,906, by May & Baker, Ltd., Dagenham, Essex, OTOFAX, 754,237, by The Wellcome Foundation, Ltd., London, N.W.1, ANCOLEX, 754,553, by The British Drug Houses, Ltd., London.

For pharmaceutical preparations for human and veterinary use, all containing milk (5)
MILKOTAL, 752,857, by Aktiebolaget Kabi,

Stockholm, Sweden.

For antibiotics (5)

OXAMYCIN, 751,571, by Merck & Co., Inc.. Rahway, New Jersey, U.S.A.

From the "Trade Marks Journal," August 29

For chemical preparations used in industry, science and photography; and agriculture, horticulture and forestry (1)

NONIDET, 754,160, by the Shell Petroleum Co., Ltd., London, E.C.3.

For chemical products for use in industry (1) MEKAD, 754,796, by Ward, Blenkinsop & Co., Ltd., London, W.C.1.

For non-medicated toilet preparations for the

SATIN FOAM, 753,248, by Boots Pure Drug Co., Ltd., Nottingham.

For all goods (3)

VANTROPOL, 753,823, by Imperial Chemical Industries, Ltd., London, S.W.I. TREND, 754,552, by Thomas Hedley & Co., Ltd., Newcastle-on-Tyne.

Fo. detergents (3)

MONEX, 753,896, by Thomas Hedley & Co.,
Ltd., Newcastle-on-Tyne.

For detergents (not for use in industrial or manufacturing processes); substances for laundry u.e. and cleaning, polishing, scouring and abra ive

preparations (3)
NONIDET, 754,160, by the Shell Petroleum
Co., Ltd., London, E.C.3.

Fo. all goods (5)

MAWPLEX, 736,656, by D. Mawdsley & Co.,
Manchesier, 1. BECAMPIN, VITAMPIN,
BEVAMPIN, 754,621-623, by Cuxson, Gerrard & Co., Ltd., Oldbury, Worcs.

For pharmaceutical preparations and substances tor human and veterinary use (5)

PHENPROSOL, 751,157, by Organon Laboratories, Ltd., London, W.C.2.

For pharmaceutical preparations for the relief of asthma and bronchitis (5)

PERASMA, 751,801, by Reginald Rodolph Perron, Nottingham,

For pharmaceutical preparations and substances, all containing amines (5)
PHETAMINE, 753,065, by Victoria Labora-

tories, Ltd., London, W.C.2. For pharmaceutical preparations and substances

HYDOL, 753,256, MYCUS, 753,259, by Boots Pure Drug Co., Ltd., Nottingham.

For sanitary substances and disinfectants (5) VANTROPOL, 753,824, by Imperial Chemical Industries, Ltd., London, S,W,I.

For hairpins, bobby pins: and hair curlers and hair wavers, all for attachment to the hair (26)

OLD BOB, 746,176, by Gaylord Products, Inc., Chicago, U.S.A.

For foodstuffs for animals (31)

FIELD-FARE, 752,123, by Kathleen Hunter, Truro, Cornwall,

For dog biscuits; and dog foods containing meat-

products (31) FIDOX, 754,290, by Excelsior Products Co., Lid., Blackburn, Lancs.

For blood-testing apparatus (10)

CRISTALITE, 754,200, by Hawksley & Sons, Ltd., London, W.1.

For scientific, optical, measuring and checking apparatus and instruments (9)

PICKSTONE, B750,232, by R. E. Pickstone, Ltd., London, N.1.

PRINT AND PUBLICITY

Advertising Campaigns

BEECHAM PHARMACEUTICALS, LTD., St. Helens, Lancs: Beecham's powders. In national and provincial Press and in national magazines, including Illustrated, Picture Post and John Bull, and on Radio Luxembourg and in cinemas,

BIOMETICA. LTD. Park Road. Barnet. Herts: Pinaud 612 cream mascara, Full colour page in Vogue

BURROUGHS WELLCOME & CD., 183 Euston Road, London, N.W.1: Saxin, In women's weekly and monthly magazines and Woman's Sunday Mirror.

Dols' Volatalise Flannel, Ltd., Huddersfield, Yorks: Dols' flannel and rub, In Press and on television and Radio Luxembourg, October to March.

JARRETT, RAINSFORD & LAUGHTON, LTD., Birmingham, 14: Ladye Jayne hairgrips in handbag wallet. In Woman's Own, Vanity Fair, Woman, Modern Woman, She, Woman and Beauty, Woman's Illustrated, and Everywoman.

PHARMAX, LTD,, Gravel Hill, Bexleyheath, Kent: Ralgex. In over 100 papers, with total circulation of over ninety millions.

GEORGE SALTER & Co., LTD., West Bromwich, Staffs: Salter Mayfair personal weigher. In John Bull, Woman and Beauty, Vanity Fair, Britannia and Eve, Everywoman, Good Housekeeping, Ideal Home, Reader's Digest.

SPINCEL, LTD., 40 Chancery Lane, London, W.C.2: Spontex cloths and sponges, In Spontex cloths and sponges, national Press, women's magazines and colour film





Specimens of display material now in use for Lucozade (Lucozade Co., Great West Road, Brentford, Middlesex).

WARM-GLDW Co., LTD., Leigh-on-Sea, Essex: Electric blankets, In national Press and high-

class home magazines. YEAST PAC Co., LTD., 146 Cromwell Road, London, S.W.7: Yeast Pac beauty mask and Yeast Pac acne treatment. National advertising,

COMMERCIAL TELEVISION

PROGRAMME details are given to enable chemists to arrange linking-up displays if they wish. Notice given is as far in advance of the programme date as can be guaranteed by the broadcasting companies.

LONDON STATION

SUNDAY, September 16: Anadin.

Tuesday, September 18: Elastoplast,

WEDNESDAY, September 19: Gibbs' S.R. toothpaste (between 10 and 10.30 p.m.); Silvikrin shampoo (between 9.35 and 10.55 p.m.).

SATURDAY, September 22: Silvíkrin hair cream (time spots),

BIRMINGHAM STATION

Wednesday, September 19: Astral cream (between 8 and 10.30 p.m.); Gibbs' S.R. 400th-paste (between 8 and 10 p.m.).

THURSDAY, September 20: Astral cream (between 8 and 10.30 p.m.).

FRIDAY, September 21: Loxene medicated shampoo.

SATURDAY, September 22: Silvikrin; Cussons' cold cream soap (at 10,45 p.m.).







NEW DISPLAY MATERIAL: Left to right, Hillone crowner designed particularly for use on the counter; showcard to display half a doz, bottles of Silvikrin liquid shampoo in the minimum of space; 11 x 8-in, showcard for new Amami lotion shampoo features Sheila Mathews, who has her programme on commercial television every Friday night, and ties up with current Press advertising.

MANCHESTER STATION

SUNDAY, September 16: Zoflora; Drene; Gleem. MONDAY, September 17: Silvikrin shampoo, TUESDAY, September 18: Silvikrin shampoo, Wednesday, September 19: Sílvikrin shampoo;

Knight's Castile. THURSDAY, September 20: Zoflora; Silvíkrín

shampoo.

FRIDAY, September 21; Silvikrin shampoo, SATURDAY, September 22; Cussons' cold cream soap (at 10.45 p.m.); Fennings' cooling powders, mother's book, rheumatic tablets (between 2,45 and 3,30 p.m., and 10.45 and 11 p.m.).

Medical Propaganda

Manufacturers' leaflets, folders, booklets, etc., directed to doctors but available to pharmacists,

British Schering, Ltd., 229 Kensington High Street, London, W.8: "Orasceron" (men-strual clock); "Oblivon" (card).

STUAL CHOCK); Oblivon (Card),
PHARMACEUTICAL SPECIALITIES (MAY & BAKER),
LTD., Dagenham, Essex; "Pleasant Journeys
begin with Avomine" (card); "Anthisan and
Phenergan" (blotter).

ROUSSEL LABDRATORIES, LTD., 847 Harrow Road, London, N.W.10: "Cortisyl Ophthalmic Pre-parations" (4-p. folder).

Booklets and Leaflets

ADVERTISING ASSOCIATION, I Bell Yard, London, W.C.2: "A Practical Guide to the Promotion of Exports," A special issue of the Association's journal designed to aid the expansion exports, the booklet is written in a clear and decisive manner. Pp. 32.

EVANS MEDICAL SUPPLIES, LTD., Speke, Liverpool, 19: "Louping-ill Vaccine," Pp. 4.
"Blackleg Vaccines and Antiserum," Pp. 8. "Nobecutane in Veterinary Practice," Pp. 8.

FLEMING SAFETY GOGGLES (DIVISION OF J. & R. FLEMING, LTD.), 146 Clerkenwell Road, London, E.C.1: "Industrial Eye Accidents." (Reprinted from the Journal of the Institution of Safety Officers.) Pp. 7.

HARKER STAGG, LTD., Emmott Street, London, E.1: "The Home Management of a Colostomy." A guide, in non-technical language, produced to offset the general lack of knowledge among patients' families of the modern technique of colostomy management (12-p. booklet for issue to customers who require them).

POLAK & SCHWARZ (ENGLAND), LTD., 50 Great Cambridge Road, Middlesex. "New Synthetic Applications of the Styrenes," Pp. 8.

RANK PRECISION INDUSTRIES, LTD., Ciné and Optical Division, 37 Mortimer Street, London, W.1; "Taylor Hobson Lenses" (2 x 4-p. leaflets dealing with 8-m.m. and 16-m.m. lenses for ciné cameras).

REMINGTON RAND, LTD., Shaver Division, Kensington High Street, London, W.8: "Remington Electric Shaver Easy Terms Plan," Pp. 6 (and pocket containing application and agreement forms).

CYANAMID PRODUCTS, LTD., Bush House, Aldwych, London, W.C.2: "Chlortctracycline in the Preservation of Perishable Foods." Pp. 20,

INDUSTRIAL WELFARE SOCIETY, INC., 48 Bryanston Square, London, W.1: "Retail Staff Training." A survey produced for the use of retail firms, small and large, who are considering starting a staff training scheme, Pp. 32, Price 2s. 6d.

HILIPS ELECTRICAL, LTD., Century House, Shaftesbury Avenue, London, W.C.2: "It's Easy with Flash," A liberally-illustrated guide PHILIPS ELECTRICAL, LTD., to flash photography, useful for beginners and experienced operatives alike, Pp. 16.

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Sunday, September 9

SOUTH LONDON AND SURREY PHARMACISTS GOLF-ING SOCIETY, West Surrey golf club, Milford, at 10 a.m. Fixture.

Monday, September 10

NATIONAL PHARMACY EXHIBITION, Victoria Halls, Bloomsbury Square, London, W.C.1, at 11.30 a.m. Opening by Mr. Allen Aldington (chairman, National Pharmaceutical Union Execu-

Wednesday, September 12

SWANSEA AND WEST GLAMORGAN BRANCH, PHAR-MACEUTICAL SOCIETY, Central Library, Swan-sca, at 7.45 p.m. Dr. Graham on "Drugs as an Important Factor in Man's Environment." Illustrated.

Thursday, September 13

HARROGATE BRANCH, PHARMACEUTICAL SOCIETY, Blue Bird Café, Harrogate, at 7,30 p.m. Mr. Heseltine (a member of the Society's Council) on "Pharmaceutical Affairs.

SWANSEA AND WEST GLAMORGAN BRANCH, PHAR-MACEUTICAL SOCIETY. Visit to Abbey Works. The Steel Company of Wales,

C. & D. WEEKLY LIST OF PRICES

A = Advanced; I.R.P. = Inclusive Retail Price; f = Tax 90 per cent.

FRIZELL & CO. (Sole Distributors: V CARTWRIGHT, LTD.) (from September **W**. er 10) Doz. 1.R.P. 24 0 4 11 Crowes Cremine†

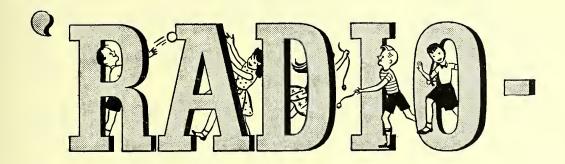
NEW PRODUCTS AND PACKS

BIOMETICA, LTD. Pinaud 612 creamy mascara†

PARKE, DAVIS & CO., LTD. Paladac 4 fl. oz. 16 fl. oz.

6 6

This winter they'll want





- contains vitamins A B₁ B₂ D
- toffee-flavoured—children love it
- sold through chemists only

Take advantage of our quantity terms to be published in B.D.H. Information

PACKINGS AND PRICES

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1 lb. jar $2/5\frac{1}{2}$ d 3/6

2 lb. jar 4/4 6/3

'RADIO-MALT'

for radiant health



SPECIALIST

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FOR

CHEMISTS



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D.D.A. and POISON REGISTERS IN STOCK In hardly more than the time it takes you to dispense a bottle of medicine we can get ready and post off to you the finest range of stock labels, cartons, wrappers, etc., you are likely ever to have seen—the result of more than a hundred years of specialisation in printing for Chemists. Write for them now.

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A NEW ALL-PURPOSE PERSONAL WEIGHING MACHINE

> For Babies—Children—Adults No Loose Weights-Capacity 20 stone x I oz.

These machines are manufactured in our Works at Edmonton, London, N.18, and comply with the British Standard Specification and all Weights and Measures Bye-laws.

This Personal Weighing Machine has been specially designed for Chemists' shops where shops where space is limited.

Strongly constructed of Cast Iron—white enamelled with tare bar to balance off the Baby Basket.

Will give extremely accurate weighing service and comply with local Weights and Measures Bye-laws.

Obtainable from your usual wholesaler or direct from the makers.

Hire Purchase Terms are available.

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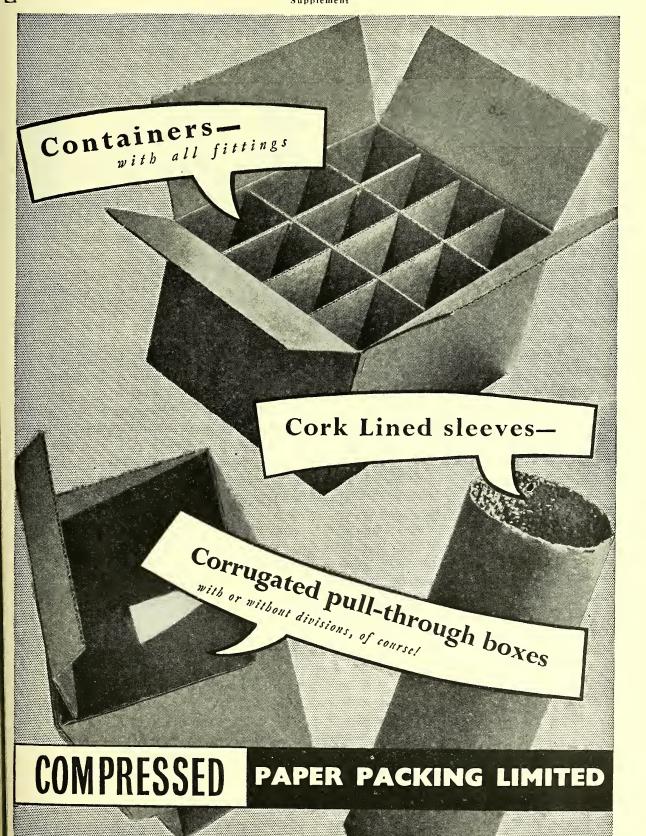


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Covered in Quilted Satin Pastel Colours: Beige, Pink, Blue, Gold, Green, or Lavender. Each wrapped in Cellophane envelope. 36 per carton, 6 of each colour.

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Covered in Embroidered Quilted Velveteen. Colours: Crimson, Gold, Green, or Blue. Each packed in Gold presentation Box. Fully guaranteed. 24 per carton, 6 of each colour.



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Covered in Rich Velour.
Colours: Blue, Beige,
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Gold. Each wrapped in
Cellophane envelope.
Fully guaranteed 36 per
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MANDELLE

'Velveteen'

Covered in Printed Velveteen. Base colours: Gold, Green, Blue, Crimson. Each wrapped in Cellophane envelope. 36 per carton, 9 of each colour.

Piease order through your wholesale house



COVERED HOT WATER BOTTLES

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J. MANDLEBERG & CO. (RUBBER) LTD.

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HAPTON, NR BURNLEY

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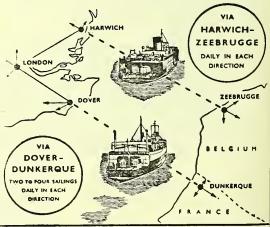
-MERCHANDISE-

MAY BE FORWARDED

IN THROUGH WAGONS
TO AND FROM ALL PARTS OF

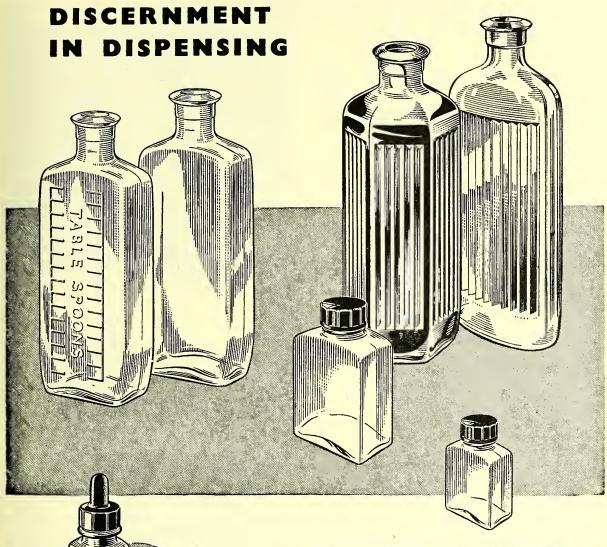
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SAVES TIME . PACKING . HANDLING



Full particulars from Continental Superintendent, Victoria Station London, S.W.I, for Dover route, and from Continental Traffic Manager, Liverpool St. Station, London, E.C.2, for Harwich route

BRITISH RAILWAYS



The discerning Pharmacist demands a container which combines attractive appearance with sound functional design. Beatson Bottles are produced especially to satisfy both these requirements—they look well, store well, handle well, pour well—Beatson Medicals, Panels, Ribbed Ovals, Emulsions, Tablets, Olive Oils, Corbyns and in fact every bottle used in Pharmacy is the better for being "BEATSON".



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Established 1751

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"URICURE" **TABLETS**

The most popular remedy for

- SCIATICA
- LUMBAGO
- **NEURITIS**
- NEURALGIA

or even the common

HEADACHE



Packed in two sizes retailing at 1/9 and 3/6

LARGE SIZE

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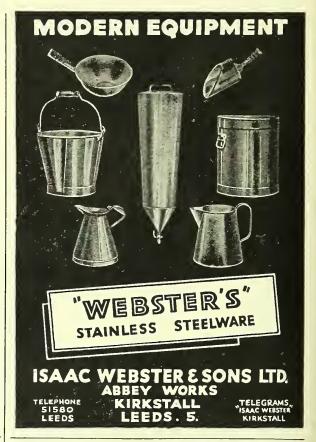
18/6

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A COMPREHENSIVE RANGE OF STANDARD **ROUND BOXES**

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OF CHESTERFIELD



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You must sell this sachet! Shandrufi The big demand for Shandruff, the enemy of dandruff, is grow-ing every week—it is a Shandruff lovely shampoo which does what is claimed for it and is the only 6d. sachet of its type now on the market. Don't leave it any longer. neat little counter display cards will aid your sales.

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They're asking for it !... New Bubbly Stergene makes history



THE DE LUXE WASH?

Matchless for Nylon, 'Terylene,' Rayon, Silks, Woollens and all fine fabrics. Gives real whiteness to whites, yet clean-washes the greasiest overalls.

WASHING MACHINES?

Stergene is harmless to metals and cannot corrode or damage the metal or rubber parts of washing machines. Controlled lather reduces risk of electrical trouble.

WHAT ABOUT COLOUREDS?

New "Bubbly" Stergene gives a vivid gay wash to all coloureds that are safe in plain water.

DOES IT LATHER? New "Bubbly" Stergene provides a controlled balanced lather—generous in the wash but easily removed at the first rinse.

ANYTHING ELSE?

Yes! New "Bubbly" Stergene has a delicate fragrance—brings outdoor freshness to the indoor wash.

DOMESTOS LIMITED, COLLEGE WORKS, NEWCASTLE UPON TYNE, 6.

Its popularity increases week by week

Price: 18/4 per dozen to retail at 2/9, from all wholesalers. Attractive counter display material available. Send for FREE Trial Sample.



This is the bottle whose sales are growing week by

week-whose popularity increases as more and more people

discover that Gill's



the original Dandruff Remover

Shampoo does remove dandruff at first application. Year by

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more

money can be made from this famous bottle.

ON SALE IN 12 EUROPEAN COUNTRIES

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Eire Agents: Mur-ra Ltd., 132 St. Stephen's Green, Dublin.

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ASPIRIN B.P. OXYQUINOLINE and Compounds BARBITURATES A FULL RANGE OF ALL BARBITURATES

ALL BRITISH MANUFACTURE AT OUR MODERN FACTORY AT BARNET

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THE ORIGINAL BRITISH ASPIRIN MAKERS

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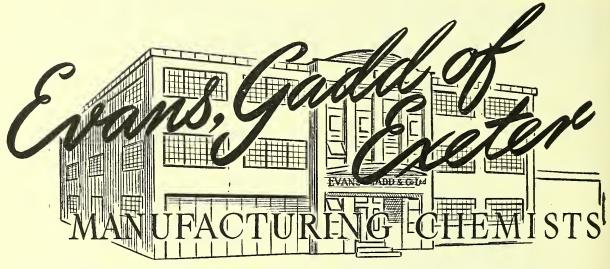
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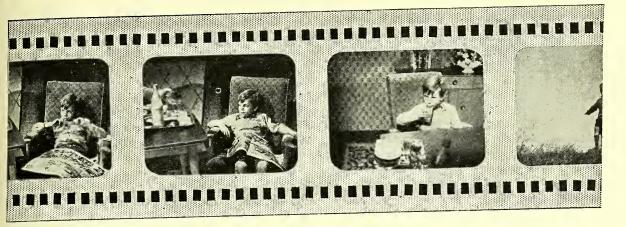
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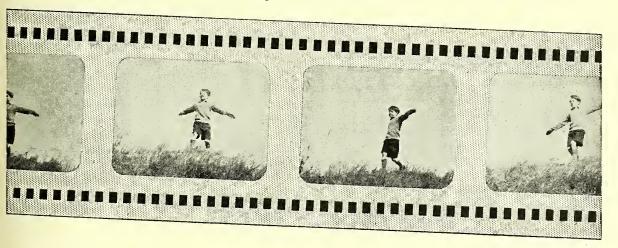
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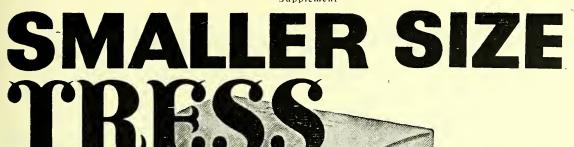


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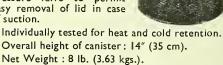
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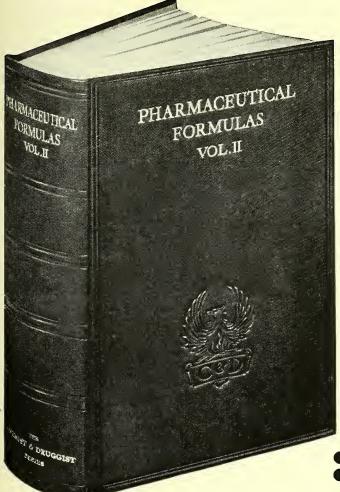
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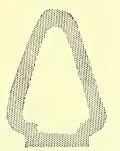
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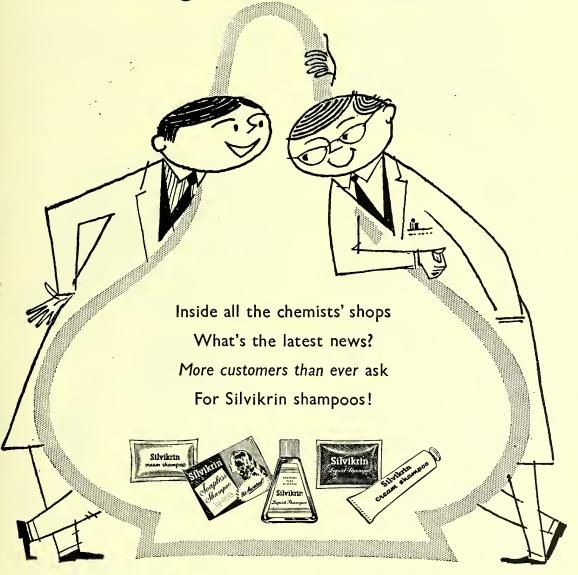
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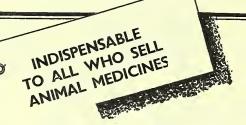
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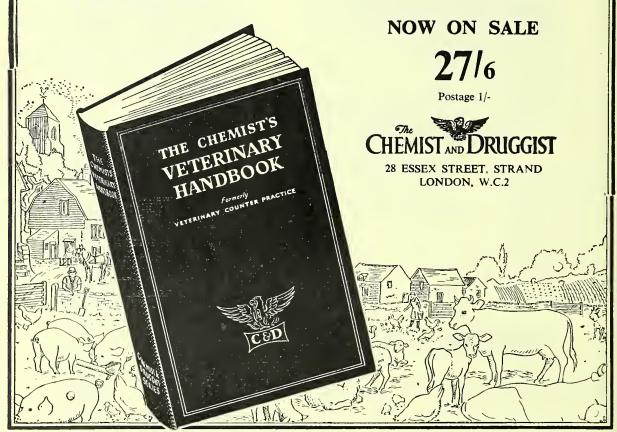


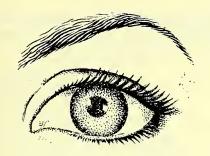
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- 1. Homberg, G., Mem. Acad., 1702, 33.
- 2. Tibbles, S., Brit. Med. J., 6th July, 1929, 36.
- 3. Anon., Chem. Week, 5th Feb., 1955, 42.

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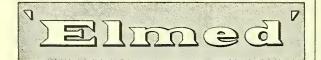
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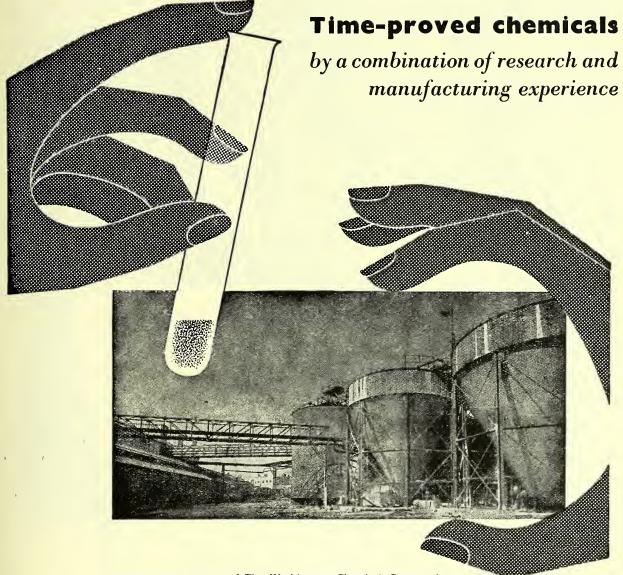
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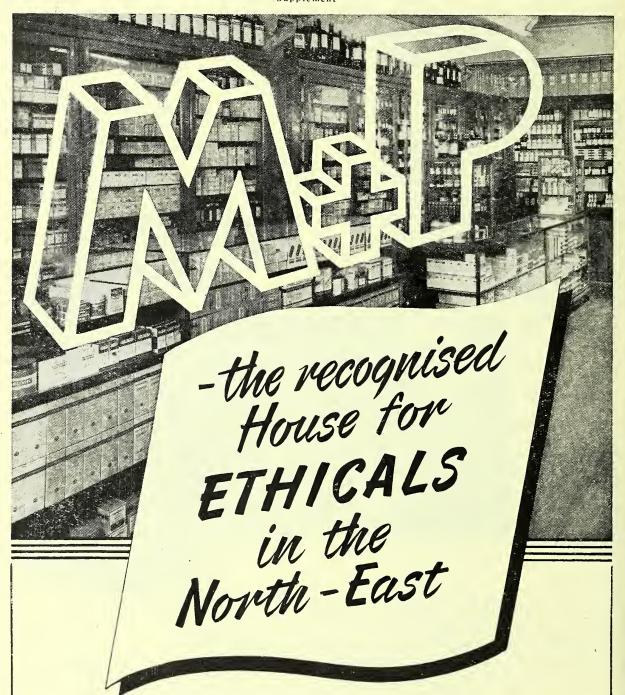
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the Secretary at the above address. C 5616

CENTRAL MIDDLESEX
HOSPITAL,
PARK ROYAL, N.W.10
Deputy Chief Pharmacist (Category V)
Applications are invited for this position, Whitley Council conditions of service, Salary £675 x £30 (7)—£885 x £40 (1) to £925 plus £25 for higher qualification plus London Weighting, Applications stating age, qualifications and experience, with names of two referees to Group Secretary, Central Middlesex Group H.M.C., Park Royal, N.W.10, as soon as possible.

C 5637

CHERRY KNOWLE HOSPITAL,
RYHOPE, nr. SUNDERLAND,
co. DURHAM
Pharmacist
full-time Chief Pharmacist, Category I, or
part-time (Sessional rates as Pharmacist-inSole-Charge), Health Service scales and conditions, Active Psychiatric Hospital of 850 beds,
Written applications forthwith to the Groun Written applications forthwith to the Group C 5578

EAST HAM MEMORIAL HOSPITAL, SHREWSBURY ROAD, LONDON, E.7

Senior Pharmacist
full-time, Annual salary £575-£775 plus £20/£30
London Weighting, Alternatively full- or parttime Pharmacist (hours by arrangement) would
be considered. Apply stating experience to
Hospital Secretary. C 5638

KENT AND CANTERBURY
HOSPITAL, CANTERBURY
Senior Pharmacist
required for the Group Pharmaceutical Department at the above hospital, This post offers excellent experience in all branches of pharmacy. The department services the Canterbury Group, comprising eleven hospitals with a total of approximately 1,000 beds, Salary (Category IV hospitals) £575 x £30 (5)—£725 x £25 (2)—£775 pcr annum. Higher qualifications allowance payable as appropriate, Applications with full details and copies of three testimonials to be forwarded within ten days of the appearance of this advertisement to the Group Secretary, Central Office, Nunnery Fields Hospital, Canterbury, Kent. C 5642

KING EDWARD VII HOSPITAL,

WINDSOR

Assistant-in-Dispensing
Temporary Assistant-in-Dispensing required for approximately three months. Whitley Council salary, Applications to Secretary.

C 5623

KING EDWARD VII HOSPITAL, WINDSOR

(Category III Hospital)
Pharmacist
required. Apply with details of service and
names of three referees to Secretary, C 5605

MAYDAY HOSPITAL (Category IV)

Category IV)

Pharmacist

Salary in accordance with Whitley Scales. Modern Department, Good working conditions, Wide experience obtainable, Canteen on hospital premises. Applications giving age, qualifications and experience together with names of two referees to be sent within 7 days of appearance of this advertisement to George A. Paines, Group Secretary, Croydon Hospital Management Committee, General Hospital, London Road, Croydon.

NAPSBURY MENTAL HOSPITAL,

NAPSBURY MENTAL HOSPITAL,

Nr. ST. ALBANS

Locum Tenens Dispensing Assistant
required (Hall Certificate), commencing October
1, 1956. Salary £8 16s, 6d, per week, New
pharmacy in course of construction. Applications endorsed "Locum Dispensing Assistant"
to Group Secretary, Napsbury Mental Hospital.

NAPSBURY (MENTAL) HOSPITAL MANAGEMENT

RUSPII AL MANAGEMENT
COMMITTEE,
Nr. ST. ALBANS, HERTS
Locum Tenens Pharmacist
required commencing October 1, 1956, at £16 16s, per week, New pharmacy in course of construction. Details to the Group Secretary with names of two referees in an envelope to be endorsed "Locum Pharmacist." C 5611

NAPSBURY (MENTAL) HOSPITAL MANAGEMENT COMMITTEE,

Nr. ST. ALBANS, HERTS
Senior Pharmacist
Applications are invited for the post of Senior
Pharmacist £575 x £30 (5)—£725 x £25 (2)—
£775. New pharmacy in course of construction,
Applications to the Group Secretary, with
names of two referees, endorsed "Senior
Pharmacist."

SOUTH-WEST MIDDLESEX HOSPITAL MANAGEMENT COMMITTEE WEST MIDDLESEX HOSPITAL

(Category V)

(Category V)
Senior Pharmacist
required to take charge of new Sterile Laboratory. Should be experienced in this type of work, Salary scale £575-£775 plus London Weighting, and higher qualification allowance £25 per annum. Commencing salary determined by previous experience. Whitley conditions. Applications stating age, qualifications and experience, with copies of testimonials and names and addresses of three referees to Chief Pharmacist, West Middlesex Hospital, Isleworth, Middlesex.

Appointments—Continued

NOTTINGHAM NO. 1 HOSPITAL
MANAGEMENT COMMITTEE
Senior Pharmacist
Applications are invited for the appointment
of Senior Pharmacist to take charge of, and
develop the Sterile Products Unit at the General Hospital, Nottingham.
Detailed information may be obtained from
the Chief Pharmacist.
Applications stating age, qualifications, and
experience, particularly in the preparation of
Sterile Products, to be sent to the Group
Secretary, General Hospital, Nottingham, C 281

SCUNTHORPE HOSPITAL MANAGEMENT COMMITTEE, SCUNTHORPE AND DISTRICT WAR MEMORIAL HOSPITAL

required for period September 28 to October 6, 1956, inclusive, Rate of pay 16 guineas per week. Write to Group Secretary, War Memorial Hospital, Scunthorpe. C 5622

ST. ALFEGE'S HOSPITAL, GREENWICH, S.E.10

GREENWICH, S.E.10
(Category IV)
(a) Deputy Chief Pharmacist
(b) Senior Pharmacist
Applications are invited for the posts of (a)
Deputy Chief Pharmacist, salary £655-£890 p.a.,
(b) Senior Pharmacist, salary £655-£895 p.a.,
in a well-equipped department at the above hospital, which may be inspected by arrangement with the Chief Pharmacist. Whitley Council conditions., Applications to Acting Secretary, G. & D./H.M.C., at above hospital.

C 5437

ST. ALFEGE'S HOSPITAL, GREENWICH, S.E.10

Locum Pharmacist
[long- or short-term) required, Salary 16-17
guineas weekly, according to experience, Apply
Chief Pharmacist at hospital (Tel.: Gre. 2655).

ST. GEORGE'S HOSPITAL,

HYDE PARK CORNER,
LONDON, S.W.1
Pharmacist
required for this teaching hospital. Salary in accordance with Whitley Council scale. Applications to Chief Pharmacist. C 5607

ST. PETER'S HOSPITAL,
CHERTSEY, SURREY
Pharmacist
required. Salary £500-£700 p.a. according to
experience. Whitley Council conditions, Accommodation available for single woman at
£135 p.a. Applications stating age and experience with names of two referees to Hospital
C 5614

WORTHING GROUP HOSPITAL

WORTHING GROUP HOSPITAL
MANAGEMENT COMMITTEE,
WORTHING HOSPITAL,
LYNDHURST ROAD,
WORTHING, SUSSEX
Pharmacist
Applications are invited for the appointment of pharmacist (male or female), vacant November 1956, for duties in new Department of service in accordance with Pharmaceutical Whitley Council Scale, age, qualifications and with the names of two warded to the Hospital

A. Applications stating experience, together referees, to be for-secretary,
V. OAKTON,
Group Secretary,
C 280

SITUATIONS VACANT

12/- for 36 words (min.) then 4d, per word. Box 2/-

RETAIL (HOME)

A PROMINENT FIRM of retail chemists have several vacancies for experienced stock checkers, either sex. Five-day week. Salary and expenses basis. Kindly submit full details of age and experience, etc., to Box C 3980.

DONCASTER CO-OPERATIVE CHEMISTS, DONCASTER CO-OPERATIVE CHEMISTS, LTD., require the services of pharmacist (male or female) as branch manager, Payment on "sales" scale, plus bonus, Salary at smallest branch over £900 per year, Rota payment extra, All shops in prosperous industrial areas where sales increases are possible. 44-hour week. Applications, with usual particulars, to the Superintendent Chemist, Doncaster Cooperative Chemists, Ltd., P.O. Box 20, Doncaster. C278

EDGWARE ROAD, W.2. Pharmacist of proved EDGWARE ROAD, W.2. Pharmacist of proved ability required to manage attractive and modern shop with varied dispensing connection. There is an excellent opportunity of a substantial salary and bonus, Good supporting staff and modern equipped dispensary, etc. Permanency with superannuation benefits. Apply with full details stating when available for interview to Box C 3978.

EXPERIENCED YOUNG LADY required for high-class pharmacy in South Kensington. Knowledge of cosmetics desirable, Happy atmosphere, Permanency, No dispensing, Box C 3986.

C 3986.
LADY ASSISTANTS required for principal LADY ASSISTANTS required for principal pharmacy in country town, (1) Dispenser, qualified or experienced unqualified for dispensing and clerical work, (2) Shop supervisor to control counter, stock, display, High salaries for efficient applicants, Young's, Ltd., Chemists, Nantwich, Cheshire.

and clerical work, (2) Shop supervisor to control counter, stock, display, High salaries for efficient applicants, Young's, Ltd., Chemists, Nantwich, Cheshire.

C 3989

NORTH LONDON. Dispensing Assistant required for pharmacy near the Angel, Edmonton, Permanent position. Hours 9 a.m.-6 p.m. Thursday 1 p.m. Dispensary recently refitted. Apply with full details of previous experience to Box C 5594.

SCOTLAND. Experienced Pharmacy Manager required in Lanarkshire area, Good salary, withentry to superannuation fund after initial period of service, Excellent three-apartment semi-detached bungalow available at very reasonable rental, Application in writing stating age, experience and when available for interview to: Mr. G, M. Archibald, M.P.S., Technical Supervisor, S.C.W.S. Retail Drug Department, 187
Bogmoor Road, Shieldhall, Glasgow, C 3997

STOCKTAKERS, Orridge & Company offer permanent carcers to applicants having good knowledge of retail prices, drugs, etc, Vacancies in London, Liverpool and Birmingham offices. Attractive salaries, Expenses paid, Previous experience preferred but not essential, Apply 184 Strand, W.C.2.

C 282

TAMWORTH, STAFFS, Pharmacist (male or female), to manage shop to open on new housing estate. Modern 2-bed, flat available. Easy hours, usual holidays, Salary and commission. Partnership entertained later if suitable, Experience and salary to Milo Turner, Chemist, Tarmworth. Phone: 219.

TOTIENHAM. Pharmacist required with interest in photography to manage a good-classestablishment in this area. Splendid opportunity for promotion with good supporting staff and development is assured, Flat accommodation can be provided if desired, Apply with full details stating when available for interview to Box C 3979.

VACANCY OCCURS for an experienced male assistant, must be accustomed to busy dispensing and general retail routine, No Sunday rota, Good salary for right man, Tomlinson, Ph.C., 63 Oxford Road, Burnley.

VACANCY OCCURS for an experienced male assistant, must be accustomed to busy dispensing

WHOLESALE

ALLIED LABORATORIES, LTD.

MEDICAL REPRESENTATIVE required to take over well-established territory comprising Sussex, part of Surrey and Berks. Previous experience desirable and first-class pharmaceutical background essential, Applicants should reside in Sussex and be carowners, Remuneration by arrangement, Life Assurance and Pension Scheme available to established staff, Please write full details in strict confidence to Allied Laboratories, Ltd., 140 Park Lane, London, W.1. C 5501

CONFIDENTIAL AND PERSONAL CLERK is required by the managing director of a substantial pharmaceutical house in the London area, Ample prospects, Applicants should possess a general knowledge of pharmaceutical office routine and kindly state age and experience to Box C 3981.

ALLIED LABORATORIES, LIMITED

Medical representatives for two areas:

(i) Hertfordshire.

(ii) Essex

Men with sound pharmaceutical background who are resident in either territory and car owners should apply with full details. Previous experience not essential as full training is given, Remuneration commensurate with position, and life assurance and pension scheme operates for established

Allied Laboratories, Ltd., 140 Park Lane, London, W.1

C 5634

SURGICAL DRESSINGS ESTABLISHED SURGICAL DRESSINGS manufacturers require representative to call on hospitals and wholesale chemists in London, Southern Counties and Midlands, Required to work from London headquarters and should reside that area, Car provided, Pension scheme, Some experience this field an advantage. Age 25/35. Apply in writing giving full details age and experience. Own staff aware, Strictest confidence observed, Box C 3962. ESTABLISHED

EXPERIENCED foreman tablet maker with knowledge of all branches of production required by expanding company, Five-day week, canteen available, Pension scheme, Full details of experience and salary required to Box C 5627.

EXPORT SALES DEVELOPMENT

ROUSSEL LABORATORIES wish to interview applicants for a new post in their organisation concerned with development

organisation concerned with development of overseas markets.
Candidates should have some experience of pharmaceutical sales promotion in this country or overseas, preferably both of outside representation and of marketing and executive work, be interested in export work and be willing to travel overseas when the occasion arises, In view of the experience required, it is not envisaged that candidates under twenty-eight years of age will be suitable. A tentative upper age-limit is thirty-five. Applications, which should give fullest details in the first instance, and will be treated in strict confidence, should be addressed to the Sales Manager, Roussel Laboratories, Ltd., 847 Harrow Road, London, N.W.10.

H. E. DANIEL, LTD., St. Bernard Works, London, S.E.19, suppliers of raw materials to the following trades, require a representative to call upon mineral water and confectionery manufacturers, perfumery and soap manufacturers, manufacturing chemists and wholesale druggists, in London and Home Counties, Experience desired. Salary, commission, superannuation and car provided, Apply in confidence, with full details to the Managing Director. C 261

LEADING FIRM

manufacturing nationally advertised hair preparations require first-class representatives with a live connection amongst retail chemists, stores and wholesalers in the following territories: London and Home Counties, South and South-west Coast, Midlands and North-west Coast. Own car essential. Excellent prospects. Reply giving fullest details to Box C 5635.

MEDICAL REPRESENTATIVE; REPUBLIC OF IRELAND. Internationally known pharmaceutical manufacturer seeks top-grade Representative to call on hospitals, specialists and doctors throughout the Republic of Ireland. Pharmaceutical or medical training essential. Selling or detailing experience desirable. The post is based on Dublin, Salary would be gencrous, according to experience, Expenses, Muster Company of the Carlowner. Interviews Dublin or London, Please state age, education, experience, and nationality in confidence to Box C 5636.

A MEDICAL REPRESENTATIVE

is required to act in the first instance as a Relief in Norfolk, Suffolk and Cambridgeshire and subsequently to be given a permanent territory. This is an opportunity for a young, single man willing to work in different parts of the country to gain valuable experience under varying conditions. Training will be given. Experience is not essential but a medical or pharmaceutical background is desirable and applicants must be of above-average personality.

A Company car will be provided and a valid driving licence is essential. Attractive salary, liberal expenses; pension and bonus schemes in operation. Apply, in confidence, giving full details to the Sales Manager, C. L. Bencard, Ltd., Minerva Road, Park Royal, London, N.W.10.

FULL TIME ASSISTANT

COSTING LESS THAN ONE SHILLING AND THREEPENCE A WEEK!

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C 5469

Situations Vacant—Continued

MEDICAL REPRESENTATIVE, Genatosan, Limited, a member of the Fison Group, require a Medical Representative to cover general practitioners, hospital medical officers, etc.. for a territory based in the neighbourhood of Northampton, and covering the counties of Northamptonshire, Buckinghamshire and Bedfordshire, and part of Warwickshire and Hertfordshire. This post is well remunerated with incentives and good prospects for a keen and energetic man possessing the ability and desire to make a success of this specialised work. The successful applicant will have to reside on his territory, Full personal details with a summary of attainments and experience, should be addressed to the Personnel Officer, Genatosan, Limited, 11 Derby Road, Loughborough, Leics. Please quote reference MR.N. C 5632 MEDICAL REPRESENTATIVE.

MEDICAL REPRESENTATIVE

ELI LILLY & COMPANY LIMITED invite applications from pharmacists for the position of medical representative in the Huddersfield territory. This progressive situation, which is pensionable, involves interviewing doctors, retail pharmacists and hospital personnel.

Previous representative experience is not essential but residence on the territory will

essential but residence on the territory will be necessary.

Please apply by letter giving full particulars, to Elj Lilly & Company Limited, Bassingstoke, Hants,

C 56. C 5633

not essential if applicant has a good phar-maceutical background. Applications invited from pharmacists. 25 to 40 years of age, stating experience and salary required. Box C 264.

MEDICAL REPRESENTATIVES required by

London manufacturing chemists to call on doctors, dentists, hospitals and chemists. Ex-perience of medical detailing an advantage but

PHARMACEUTICAL CHEMISTS

PHARMACEUTICAL CHEMISTS

Applications are invited from male Pharmaceut cal Chemists to fill vacancies in production control work associated with sterile techniques used in the formulation and filling of antibioties. Graduates in pharmacy, preferably with an engineering background or qualification in pharmaceutical engineering are required, Age not over 35 years.

The positions are vacant at the Liverpool premises of The Distillers Co. (Biochemicals), Ltd., manufacturers of antibiotics. The company operates non-contributory sickness and pension schemes; canteen and social facilities are available and three weeks' annual holiday is given, Salary will depend on qualifications and experience. Apply: Personnel Manager, The Distillers Company (Biochemicals), Limited, Fleming Road, Speke, Liverpool, 19. C 564

PHARMACIST (under 30) required as assistant to buyer of modern adequately staffed drug and dispensing section of department store. Opportunity to gain wide experience and promotion. Store hours, a good holiday, and discount on personal purchases. Apply Personnel Controller, Bentalls of Kingston-on-Thames, Surrey.

C 5645

PROCESS WORKERS required for manufac-turing laboratory of leading London drug houses. Five-day week, canteen facilities. Apply giving age, experience and salary expected to Box C 5624.

PRODUCTION CHEMIST, 25-35 years of age, required by rapidly expanding toilets and cosmetics firm as first assistant to the present works manager, Good salary with guaranteed yearly increase to the right person, Apply in striet confidence to Box C 276.

QUALIFIED CHEMIST, young, required with manufacturing and analytical experience by oldestablished firm of manufacturing chemists in the Midlands. Applications, in confidence, stating age, qualifications, experience and salary required to Box C 3995.

REPRESENTATIVE WANTED to carry additional chemist/beauty saloon line. Commission and expense allowance, State territory covered, etc., Box C 5639.

REQUIRED: Experienced tablet maker for granulating, compressing and coating of tablets. Good working conditions, canteen facilities, five-day week, Apply: The Manager, E. R. Squibb & Sons, Ltd., Speke, Liverpool, 19.

C 5631

SALES REPRESENTATIVE for Essex and ad-SALES REPRESENTATIVE for Essex and adjacent counties required by well-known firm manufacturing proprietary lines, packed goods and tablets, Existing contacts and trade experience in the area advantageous. Salary and excellent commission, pension scheme. Car provided and expenses paid. Write Box C 5626.

SANDOZ PRODUCTS LIMITED Medical Representatives

Due to business expansion Sandoz Products
Limited invite applications from young
men for the appointment of Medical Representative in a number of areas in Scotland, England and Wales, Applicants
should be Pharmacists, not exceeding 32
years of age. Attractive salary, Superannuation scheme in operation, Thorough
training will be given.

Please send full details of age, education,
qualifications and experience with photograph (which will be returned) to Staff
Manager, Sandoz Products Limited, 134
Wigmore Street, London, W.1. C 5582

SCOTT & BOWNE, LTD., are expanding their sales force and have a vacaney for a top-grade representative to cover Wales, Shrop-shire, Hereford and part Worcestershire. Applicants should be between 25 and 40 with experience of the chemist trade preferably in Wales, They must be prepared to live in South Wales. Remuneration is by salary and commission with all expenses paid, Company car provided, Pension Scheme. This is a fine opportunity for a man with initiative and ability seeking a permanent position. Write with full details of age and experience to the Sales Director, Scott & Bowne, Ltd., 50 Upper Brook Street, London, W.1.

SPEKE WORKS LABORATORIES

SPEKE WORKS LABORATORIES

PHARMACIST, preferably with degree or major diploma, and some experience in hospital or industrial laboratory, required as head of pharmaceutical section in laboratories of large firm of antibiotic manufacturers in the Merseyside area. Duties would include supervision of certain aspects of quality control of ethical products; development of new methods of testing and inspection; initiation of or participation in many varied problems encountered in large-scale production. The company operates non-contributory sickness and pension schemes; canteen and social facilities are available; three weeks' annual holiday given. Salary will depend on qualifications and experience.

Apply: Personnel Manager, The Distillers Company (Biochemicals), Limited, Fleming Road, Speke, Liverpool, 19.

AGENCIES WANTED 17/6 for 36 words (min.) then 4d. per word. Box 2/-

NEW ETHICAL COMPANY wishes to contact EIRE company who are willing and able to handle all the company products on a sole agency basis. Only a firm who can undertake both medical detailing and complete distribution considered. Write Box C 3991.

MERCK-SHARP & DOHME LIMITED

A vacancy exists in S.W. London for a Medical Representative to call on doctors and chemists. Applicants must be Pharmaceutical Chemists or men with a very good pharmaceutical or medical background, Previous experience in Medical Representative work an advantage but not essential as training will be given.

Applications are invited from men between the ages of 24-35 desirous in taking up this interesting work with a progressive Company, Good remuneration to the right man. Company car provided and Pension Scheme in operation.

Apply: Sales Manager, Merck-Sharp & Dohme, Ltd., Hoddesdon, Herts.

C 5646

- HOLBORN SUPPLIES, LTD., -55 LEATHER LANE, E.C.1 Phone: HOLborn 6689.

Chilton Home Hair Clipper; Evanol, Simplex, Inecto, Color Glo, Shadeine, Monil, L'oreal bleach, etc.; Flashmaster cameras; Remington, Sunbeam, Philishave Electric Shavers; Pifco Sunlamps, Infrared, Massagers, Perihel Actinea Sunlamp.



SITUATIONS WANTED

3/- for 18 words (min.) then 2d. per word. Box 1/-

WHOLESALE

EXPERIENCED MEDICAL REPRESENTA-TIVE seeks change, Own car, At present Berk-shire, Oxfordshire and Gloucestershire area, Other area considered, Highest references, Box

IRELAND. Qualified chemist with over twelve years' experience as medical representative in the greater Dublin area seeks similar employment with firm not already represented here. One not attaining to international status preferred. Engagement on part-time basis considered. First-class coverage to specialists and consultants guaranteed. Box C 3987.

MEDICAL REPRESENTATIVE, experienced, Glasgow-Scottish area, First-class consultant, G.P., connections, excellent salesman, Can influence sales, Offers, please, Box C 3992,

NEWCASTLE, NORTHUMBERLAND, Re-tired, 34 years calling chemists, wholesalers, grocers, co-operative societies for well-known firms. Car owner. Box C 3982,

PHARMACIST with wide and successful managerial experience requires position in substantial business London and Home Counties where successful buying and selling record, hard work and initiative will be duly rewarded. Box

YOUNG SENIOR EXECUTIVE seeks responsible position as general manager or as right-hand man to managing director of group of drug stores, Thorough knowledge of chemists' sundries and allied lines, Buying, selling, admin-istration and staff control, Box C 3996.

WHOLESALE (OVERSEAS)

RHODESIA. First-class medical representative, very experienced, desires similar appointment Salisbury or Bulawayo, Medical training, Proved salesman, Offers, Box C 3993.

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MANUFACTURING CHEMISTS invite inquiries for the manufacture, packing, etc., of private formule preparations, liquids, powders, tablets. Dispatch facilities available with own printing department, Frank Macowal & Yanatas, Ltd., Wilshaw Street, London, S.E.14. Tel.: Tideway 3846-8.

OUR FACTORY AT YOUR DISPOSAL. We have modern facilities for the production, under your own Brand, of preparations like bath cubes, bath salts, powder in envelopes, perfumes, talcum powder, etc., as well as technical products, e.g., disinfectant blocks, moth repellants and agricultural tablets, Write Box No. AC21314, Samson Clarks, 57/61 Mortimer St., W.1,

WANTED

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ALL KINDS OF BOTTLES, JARS, SCREW CAPS, cartons, packaging materials and manufacturers' stocks of all kinds bought at fair prices for spot cash, We are buyers of merchandise of EVERY DESCRIPTION. Clearance Stocks, Discontinued lines, Surplus and Redundant Stocks, Should you have anything for disposal, please send us samples and particulars, Reliance Trading Co., 13 New College Parade, Finchley Road, N.W.3, C 153 MEDICAL BOTTLES, tablet bottles, closures and all types of packaging materials purchased, no quantity too large. Samples and full details to Noel Davold & Co., 9 Laurence Pountney Lane, Cannon Street, E.C.4. Mansion House 3951-2.

WANTED: Any quantity Goya "Studio" perfume. Postage paid. Please write Box : Any quantity Goya "Studio" Postage paid. Please write Box

perfume. C 3994.

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WE WILL PURCHASE for cash a complete stock, a redundant line, including finished or partly finished goods, packing raw materials, etc. No quantity too large. Our representative will call anywhere. Write or telephone:—Lawrence Edwards & Co., Ltd., 6/7 Wellington Close, Ledbury Road, London, W.11, Tel.: Bayswater 4020 and 7692.

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SURPLUS STOCKS for disposal of Cream Pots, clear glass $\frac{1}{2}$ oz., 1 oz., 2 oz., also 1 oz. and 2 oz. lipped plain glass round vials, all clean stock. Any reasonable offer accepted. Sample on request to Hancock & Co., Ltd., 144 Fleet Street, London, C 4001 E.C.4.

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100 BAYS of brand new adjustable steel shelving, 72 in, high by 34 in, wide by \$\mathbb{2}\$ in, deep, stove-enamelled knocked down—6 shelf bay—£3 15s. Sample delivered free. N. C. Brown, Ltd., Eagle Steelworks, Heywood, Lanes.

150 GROSS, 2 oz. cork-mouth cannons, 7/6 per gross; 60 gross 1 oz. cork-mouth cannons, 7/6 per gross; 60 gross 3 oz. cork-mouth limes, 9/- per gross; 100 gross 2 oz. screw-neck cylindrical toilet bottles, and plastic caps, 15/- per gross. 60 gross 6 oz. barley sugar jars, screw neck, 12/- per gross. Box C 3998.

MANUFACTURING CHEMISTS invite offers for following part or complete lots, 100 kilos acid citric, B.P., 40 kilos phthatylsulphaceta-mide, B.P., 143 kilos dicalcium phosphate, 100 kilos magnesium hydrate, B.P. Samples on request to Box C 5630.

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Manufacturers, Wholesalers, Distributors, 37 HOUNDSDITCH, LONDON, E.C.3.

C 269

TOCKTAKING REMNANTS: Oils: Carui, lime, menth. pip., pimento, terebene and ti-tree; rose and otto lily of valley. Tinctures: Arnic, flor, and benzoin simp. Liquores: Rhei pro syr, and arnic, pro tinct, All highest quality and attractively priced, Trinity Laboratories, Ltd., Blackburn. C 3985

TRADE MARKS

The Trade Mark No. 278710 consisting of the word "MIGRINE" and registered in respect of proprietary medicines for human use was assigned on July 28, 1956, by George Albert Holt Wilson of 220 King Cross Road, Halifax, to the Wellcome Foundation, Limited, without the goodwill of the business in which it was then in use.

C 5641

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